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Is It Ever Proper for the Doctor to Say "I Have Cured My Patient"?

and

May the Word "Cure" Be Properly Used in Connection with the Treatment of Syphilis?

LEON L. SOLOMON, M.D.,
Louisville, Kentucky

The writer thinks the phrase and the word should rarely be used, never in the management of the syphilitic patient. The employment of the expression, "My patient has been cured," is seldom permissible.

Especially is it best not to speak of cures brought about by the use of drugs. When the patient has gotten well after pneumonia, typhoid or other affection, it were better to say that the case has recovered, than to refer to the effecting of a cure.

On the other hand, as regards the surgeon's work, it has apparently not been improper to speak of the curing of club foot or to say that a cure was brought about in a malignant growth by means of total removal or extirpation. In the latter instance, since cure will hardly be claimed, until the lapse of a certain number of years, it may be proper to consider actual cure as having taken place, where there has been no recurrence.

Apparently, a few drugs deserve to be accorded curative property. The alkaloids of Cinchona exert an influence on malaria which, not infrequently, is so positive as to be accounted specific, permitting of the phrase "cured by Quinine." Similarly, the specific action of certain antitoxins in combating toxic products, developed by germ life, may be spoken of as curative—"cured of diphtheria"—"cured of tetanus." And, with equal propriety, it may be permissible to speak of "curing a case of asthma" or "curing an individual of stammering."

Formerly, it was common for the physician to promise cures—"I will cure you of syphilis, provided you permit me to give you a full course of treatment and provided you live up to all my requirements." This course of treatment as a rule included the giving of Mercury, Iodides and Arsenic, intermittently for three years, more or less. Was it proper then for the doctor to tell the patient that a cure had been accomplished, where such a course had been followed? Could the patient be considered cured (after submitting to a three year course of treatment) to the extent that he would ever thereafter remain well and never again show sign or symptom of his disease?

With the advent of the newer remedies—the Arsphe-namines, Bismuth and other drugs—is it proper today to claim cure of syphilis? In one word, is syphilis a curable disease and are we ever justified in pronouncing our patients cured?

The writer believes syphilis is not cured by any given course of treatment. He is of the opinion that syphilis may not be called a curable disease. He feels that the word "cure" is improperly applied to this ailment and should cease to be employed. He believes there would be much less irreparable damage (notwithstanding syphilis is very amenable to treatment) did the physician cease to speak of cure, cease to promise cure and cease to pronounce the patient cured.

He is aware that no disease is easier to treat and none is more satisfactorily treated by the doctor than is syphilis. And yet, he insists, experience eventually will prove to the most sanguine believer in drug therapy, that all that may be properly claimed for treatment of syphilis is arrest of the malady.

How long the patient will remain free from return of signs and symptoms is not to be determined by any fixed rule or measure, or by any estimate—the resisting power always a variable entity, the character and degree of infection likewise a thing not capable of measure. In addition, there are potent factors which must be reckoned, including chance infections and ailments which, by contributing to the lowering of vitality, may permit a then dormant syphilis (one that might otherwise have remained dormant) to assert itself in more or less vigorous, active and possibly defiant form.

Witness the appearance of Gumma, Ulcer, Necrosis of bone, Iritis, Retinitis, Optic neuritis, Paresis, Locomotor ataxia, and other no less frequently observed and commonly met manifestations, any or all of which may be beyond the power of the physician to heal or even to benefit, because of the neglect of necessary prophylactic treatment, the patient having been placed in a false state of security of mind by being told he had been "cured of his disease."

During thirty-five years of practice, the writer has learned to refrain from saying "I can cure you." It is sufficient to make plain to the patient that return of health may be reasonably expected and it has seemed sufficient to say, "You may look forward to a maintenance of good health throughout a lifetime, which need not be necessarily shortened because of this infection, provided you will submit to treatment now, and hereafter."

It is important for the patient to know that the plan of treatment contemplated not only requires vigorous, anti-syphilitic medication, following the onset, but there must be careful check-up at frequent intervals for several years, and thereafter, every six months, for no less than twenty-five to thirty years, the patient must return to the physician for treatment. These figures are used because there is little likelihood of development of sequelae, after twenty-five to thirty years, provided, through the employment of the Arsphenamines, Mercury and especially the Iodides, no evidence of the disease is permitted to manifest itself for such period.

The best guide for the syphilitic is that which, believing the patient never cured, recommends recourse to prophylactic medication twice a year, throughout a lifetime. Except in those rare instances in which syphilis resists all forms of medication and continues to present evidences, despite proper and sufficient treatment, my experience has been that, once under control, with complete restoration to health, the patient who is properly and persistently treated does not thereafter relapse and does not fall victim to any one of the devastating sequelae.

Let it be understood that syphilis is a treatable disease. The overwhelming majority of its subjects recover full measure of health, remaining well, provided further treatment is consistently administered. In the proportion as the medical profession ceases to make use of the word "cure" will more and more of our patients return regularly for treatment, thus lessening that large number, who otherwise succumb to

THE RAVAGES OF UNCURED SYPHILIS.
Suite 506,
Breslin Medical Arts Bldg.

Influenza

It is a happy quality of the human mind that trouble once over is soon forgotten. The devastating pandemic of influenza in 1918-19, sorely as it touched us at the time, left little permanent mark: the recent epidemic comes as an unpleasant reminder of our lack of knowledge of the disease and our almost total inability to deal with it. A brief stock-taking of our information about influenza may therefore be in order.

1. *Etiology*.—It is assumed that influenza is caused by a living virus, but the nature of such a virus is quite unknown. The influenza bacillus, so-called, discovered toward the end of the epidemic of 1890 and advanced by Pfeiffer as the cause of the disease, was tacitly accepted until the pandemic of 1918. It then became clear that the Pfeiffer bacillus was not the primary etiological agent for the following reasons: first of all, it seemed unlikely on clinical grounds alone that an organism as ubiquitous in interepidemic periods in all sorts of infections of the respiratory tract could suddenly produce a disease of such exquisitely fixed characteristics, as epidemic influenza; and, secondly, in certain localities Pfeiffer bacilli were not specially abundant in the influenza cases. It has not been possible to produce influenza experimentally in animal or in man by inoculation with cultures, and finally, strains of Pfeiffer bacilli isolated during the pandemic were shown by serological methods to be of no uniform type as one would expect were they the cause of the disease. Most students of the question are now in agreement that Pfeiffer bacilli are no more than opportunistic secondary invaders on soil injured by the essential virus of influenza; they may, of course, play a part in the secondary bronchopneumonias. The *Bacterium pneumosintes*, brought forward during the 1918 pandemic by Olitzky and Gates as possibly being the real causal agent of influenza, has not substantiated its claims, and at present we must admit our complete ignorance of the etiological agent.

2. *Mode of Transmission*.—Here again we encounter difficulties and contradictions. It is claimed that influenza travels no faster than the most rapid means of communication—a fact which suggests spread from person to person. In individual cases, however, it is often extremely difficult to trace contact, or obvious contact need not be followed by infection. It seems highly likely that the disease is most readily transmissible in the very early stages, or even in the preclinical period; people frankly ill with influenza are perhaps already relatively harmless. It is this fact which makes our attempts at isolation ineffective; the danger lurks in those who are not yet ill and, therefore, are not under control. Be this as it may, we know of no adequate means as yet to control the spread of the disease, and curves of incidence in 1918, even when masks and modern precautions were employed, were identical with those of previous epidemics.

3. *Clinical Points of Importance*.—The most fundamental concept in regard to influenza and the most difficult for the physician to grasp is that the disease is not essentially a respiratory infection. The reason for this error is that influenza is often confused, on the one hand, with upper respiratory tract infections which are not influenza at all (tonsillitis, sinusitis, etc.), or with the secondary pulmonary infections which are prone to occur with or after influenza. Uncomplicated influenza presents the following characteristics:

(a) The general constitutional reaction of an acute infection—headache, malaise, general aching, anorexia, etc.

(b) A curious hyperemia of the mucous membranes of the air passages, and in more severe cases an erythema of the face and neck.

(c) Fever of determinate duration (in uncomplicated cases rarely over five to seven days).

(d) Leukopenia.

(e) A remarkable tendency to secondary pulmonary infections by various bacteria normally present in the upper air passages—streptococci, pneumococci, influenza bacilli, etc. These bronchopneumonias are not an integral part of the primary disease (influenza), but are complications—frequent, to be sure, but not essential.

4. *Management*.—It is most important for the physician to realize that patients rarely die of uncomplicated influenza; it is the secondary pneumonias which are fatal. Therapy, therefore, should be primarily directed against the development of these complications. The essential point is to get the patient to bed early and to keep him there. The neglected case—the patient who is allowed to be up and to carry on in the early stages of the disease is usually the one who develops pulmonary complications. Not less often a person doing well is allowed to get up too soon, with the result that a pneumonia develops. Rest in bed, then, if possible for several days to a week after the temperature is entirely normal, plenty of fluids, and sedatives such as codoin combined with phenacetin or aspirin, are the main points in the therapy. In our experience vaccines and sera are without rational basis in this disease. Bronchopneumonia, if it occurs, should be handled along the lines employed in ordinary lobar pneumonia.—Arthur L. Bloomfield, *Calif. & Western Med.*, Feb., 1929.

The Foot in Pregnancy

JACOB GROSSMAN, M.D.
New York

About twelve years ago, the writer published an article in the *Medical Record* (December 16, 1916), the title of which was a "Plea for the Prevention and Treatment of Weak Feet During Pregnancy and the Puerperium." Up to that time very little had been published in which the subject of weak feet occurring during pregnancy and the puerperium had been treated as a whole. Mention of it had been made during the discussion of weak feet in general, but it had not been given the consideration which is due it.

Since this article was published the writer has ex-

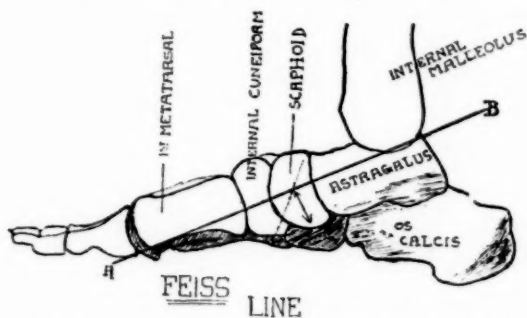


Fig. 1.—Skeleton of the foot, showing the Feiss line, A-B.

amined the feet of one hundred and nineteen pregnant women who attended the prenatal clinic of Lebanon Hospital. The number of abnormal feet encountered and the number of women complaining of symptoms resulting from the abnormalities comprised more than two-thirds of the entire series.

In recording the findings of these cases several points were considered. First among these was the consideration of the distance of the keystone of the bony longitudinal arch, i. e., the scaphoid, below a line known as the Feiss line. This line is determined by connecting the posterior border of the internal malleolus with the plantar surface of the first metatarsophalangeal joint. (Figure 1.) In the normal foot the scaphoid should be found one-half inch below this line. In weak feet it is usually increased to three-quarters of an inch or more.

The second point considered was the quality of the muscles of the plantar surface of the foot. Usually in weak feet the muscles are found to be fair or poorly developed. In recording the condition of the muscles the terms good, fair and poor have been used. This is an important determination as a heavy, well developed group of muscles may give a flat impression, which flat impression may represent an apparent flat foot, the bony arch and other findings being normal.

The third point considered was the juvenile fat pad. Here again the fat pad may give a flat impression in spite of the fact that the foot is otherwise normal.

The fourth point determined was the presence of eversion of the heels and heel cords. This was recorded as slight, moderate or well marked.

Finally, the impression of the foot, or pedograph, was taken. The pedograph varied and was recorded as first, second, third degree weak feet or normal, as the case happened to be. The details of determining the degree of weak feet and the methods of taking the pedograph follow. The patient is seated, the leg is extended and the bare foot is painted with an iron solution. The foot

is then placed on paper and the patient told to place all the body weight on that foot. At this time the contour line is drawn by using a pencil held at right angles to the plane surface. The contour line demonstrates the amount of inversion of the ankle or eversion of the heels and heel cords. The foot is then removed from the paper, leaving a yellowish imprint. A solution of tannic acid is now applied to the iron imprint which turns a jet black, giving a record which can be preserved indefinitely.

The base lines and the auxiliary lines are now drawn on the pedograph for estimation of the degree of weak foot. The first base line is drawn from a point posterior to the internal malleolus to the first metatarsophalangeal joint. The contour line extending beyond this line represents the degree of inversion of the ankle or eversion of the heels and heel cords. The line of axis of weight bearing is next drawn, from the center of the heel to a point midway between the first and second toes. A line is then drawn at right angles to the line of axis weight bearing from a point posterior to the heel. Another line is drawn also at right angles to the line of axis weight bearing, from the first metatarsophalangeal joint. Midway between the last two lines, also at right angles to the line of axis weight bearing the line of estimation is drawn. The line of estimation is then checked. One check is placed at the outer border of the imprint, the other at the junction of the line of estimation and the first base line, or if valgus is present, at the junction of the line of estimation and the contour line. Midway between the two check marks on the line of estimation is the normal point, that is, the point where the inner border of the imprint meets the line of estimation in a normal foot. To the inner side of this point the line is divided into three parts representing the de-

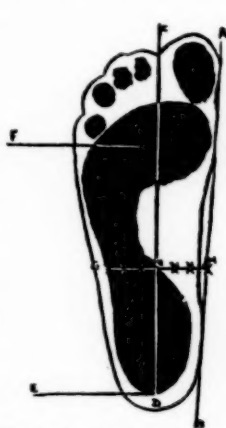


Fig. 2.—Imprint of normal foot.

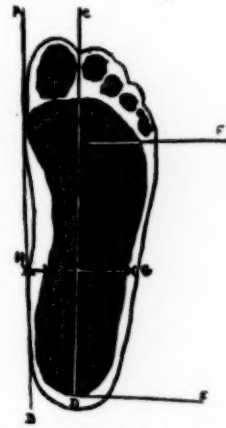


Fig. 3.—Second degree weak foot.

grees of weak foot. The first check mark represents first degree, the second check mark represents second degree weak foot and so on.

This procedure has been followed in the one hundred and nineteen cases of the series with the following findings.

For convenience and also to facilitate description the cases were divided into three groups according to age.

The first group comprised those patients whose ages ranged between eighteen and twenty-five. This group

consisted of forty-six cases. Of these thirty-three complained of symptoms and thirteen did not. On examination thirty-five had eversion of the heels and heel cords and eleven were normal.

The second group consisted of those patients whose ages ranged between from twenty-six to thirty-five. There were fifty patients in this group. Thirty-seven complained of symptoms and thirteen did not. Examination revealed that thirty-six had eversion of the heels and heel cords and fourteen were normal.

The third group consisted of patients whose ages ranged between thirty-six and forty-two. There were twenty-three cases in this group. Fifteen complained of symptoms and eight did not. Examination revealed that seventeen had eversion of the heels and heel cords and six were normal.

Eversion of the heels and heel cords is the most constant, one might say diagnostic symptom of weak feet. In the entire series eighty-eight cases had eversion of the heels and heel cords, and only thirty-one were normal.

The muscular development of the feet was poor in ten cases, fair in sixty-eight and good in forty-one.

The juvenile fat pad was present in one case and absent in one hundred and eighteen.

The scaphoid was one-half inch below the Feiss line in forty-six cases, three-quarters of an inch in fifty-three cases and one inch in twenty cases.

The pedograph was normal in sixty-eight cases, first degree weak feet in ten, second degree weak feet in thirty-eight and third degree weak feet in three.

Edema of the legs was present in twenty-four cases and absent in ninety-three.

Varicose veins were present in twenty-six cases and absent in ninety-three.

Forty-six patients were para one, twenty-seven were para two, twenty-seven were para three, twelve were para four, four were para five, one was para six and two were para nine.

Much has been written about the hygiene of pregnancy and the puerperium, in which proper clothing and belts have been recommended; very little stress, if any, has been laid upon proper foot wear or the care of the feet. Many obstetricians in referring to the subject, simply recommend a low-heel shoe. Others overlook the subject. It is true that weak feet occurring during these periods do not differ materially from weak feet in general, still the presence of pregnancy seems to distract attention from the feet and one is very apt to believe that the various symptoms complained of are the result of pregnancy rather than those of existing weak feet.

That weak feet may be present for a long time without producing symptoms has been demonstrated time and again. It requires in such cases but a little added strain or perhaps a lowering of the general resistance of the patient, such as one would expect to occur during pregnancy, to aggravate the condition and produce symptoms. The symptoms rarely depend upon the amount of deformity present. A very slight eversion of the heels and heel cords may be accompanied by severe suffering while on the other hand a severe pes planus may be accompanied by very little suffering. The relief of symptoms which occurs in the vast majority of the former type of cases by the institution of proper treatment proves beyond a doubt that weak feet are responsible for these symptoms.

Many pregnant women complain of pain which they refer to the back, thighs or legs. Very often they are told that the pain is the result of pressure of the presenting part of the child upon the nerves and that they will disappear after labor. It is true that in a number

of instances, pressure of the presenting part may produce various neuralgic pains referable to the thigh and back, which do disappear upon the termination of labor. In a vast majority of instances, however, these pains are the result of weak feet. In an analysis of seven hundred cases of weak feet, the writer found four hundred in whom the pain was referable to the back and thighs and not to the feet (*Interstate Medical Journal*, May, 1916). From this one can readily appreciate the fact that weak feet can be present even though the patient does not refer symptoms directly to the feet.

The mere recommendation to wear low heels is not



Fig. 4.—Second degree pes cavus.



Fig. 5.—Third degree pes cavus.

sufficient as many of the patients are accustomed to wear high heels and when they attempt to wear low heels they experience a sensation of falling backwards. To compensate for this they must assume various unnatural and tiresome postures so as to maintain their proper balance. This type of patient should wear a high Cuban heel.

When one considers how important it is for pregnant women to obtain proper exercise, especially walking, one should appreciate the importance of early recognition of the presence of weak feet, thereby being enabled to institute proper treatment for the relief of this condition. It is torture for patients with weak feet to walk. Hence they avoid as much as they possibly can taking advantage of this beneficial and necessary exercise. As a result of the sedentary life which these individuals lead, general nervousness, irritability, loss of appetite and loss of interest in their usual vocations result.

Accidents such as falls resulting in fractures and sprains of the ankle and miscarriages are not at all uncommon during pregnancy. These are usually the result of existing weak feet and the wearing of improper footwear.

Some of the patients experience very little or no discomfort during pregnancy but do complain of symptoms referable to weak feet during the puerperium.

Pathology: The pathology of weak feet of pregnancy does not vary from that of weak feet which we ordinarily meet with. The early and moderately advanced cases usually show eversion of the heels and heel cords and a lowering of the arch as a whole. The eversion varies from a mild to a well marked rolling out of the heels and heel cords.

In the advanced cases the head of the astragalus becomes partially dislocated inwards and downwards from the scaphoid and at times it may articulate only with the latter at the extreme outer part of the head; in consequence, the cartilage disappears from the portion of the bone which is thus exposed and the head forms a

marked prominence beneath the skin on the inner border of the foot. The arch of the foot gradually diminishes, until finally the sole is applied flat to the ground. In well marked cases, the anterior part of the foot becomes abducted and in very severe cases the inner border of the foot may be convex and the outer concave, so that the patient walks more on the inner side of the foot than on the outer.

In very severe cases the peronei tendons may be dislocated from their groove and lie upon or anterior to the external malleolus. In cases of long standing marked changes also occur in the bones; the uncovered portion of the head of the astragalus becomes enlarged, so that it cannot be replaced in its normal position. Occasionally actual bony ankylosis may occur. There may be effusion into the sheaths behind the tendons and in the tarsal joints.

Symptoms: The symptoms of weak feet rarely depend upon the degree of deformity which may be present; patients with a very slight eversion of the heels and heel cords may suffer severely while on the other hand patients with a severe pes planus may suffer very little.

The subjective symptoms are:

(a) Pain, present in the vast majority of patients, usually varying from a severe cramp-like shooting pain to a dull ache. Occasionally the pain is not referred to the feet, but to points distant, i. e., back, hip, thighs, knees and calves. The pain may be unilateral or bilateral; in some instances when double weak feet are present, patients may complain of unilateral pain.

(b) Another group of symptoms which occur quite frequently includes weakness, discomfort, fatigue. These are especially evident after exertion.

(c) Many patients complain of numbness and coldness of the feet. These are usually the result of impairment of the circulation which is commonly associated with weak feet.

(d) As a result of all these symptoms there may be mental depression, nervous symptoms and loss of appetite.

The objective symptoms are:

(a) The most constant, one can almost say the diagnostic sign of weak feet, is eversion of the heels and heel cords. This may vary from a very slight rolling out of the heels and heel cords to a well marked eversion.

(b) In some cases, especially in fleshy patients, there may be a circumscribed swelling at the outer side of the ankle in the region of the external malleolus.

(c) Muscular spasm or rigidity is very common in the advanced cases. The spasm is due to the shortened and contracted muscles on the outer and upper surfaces of the feet, the result of the persistent attitude of valgus.

(d) Disturbance of the normal Feiss line is usually present. The scaphoid in the normal foot should be one-half inch below this line. In weak feet it is usually three-quarters of an inch or more below.

(e) The pedograph may vary from the normal in a number of patients.

Treatment: In general we can consider the treatment of weak feet or rather the feet during pregnancy and the puerperium under the headings prophylactic and curative.

A. Prophylactic:

(1) Proper footwear: Before describing in detail the shoe which has proved very satisfactory in pregnancy and the puerperium, a very brief mention of some of the possible conditions which may arise during these periods would not be out of place. It is a well known fact that

the circumference of the legs of many pregnant women vary from one time of the day to another. Women will arise in the morning with very little or no swelling of the legs and as the day advances swelling appears.

Very often a breaking down of the anterior arch is associated with weak feet. At times patients slip and fall, sustaining sprains and fractures. In other instances they may trip because their heels catch in carpets or rugs or their dress when they ascend and descend stairs. The added strain of pregnancy may aggravate an existing valgus of the feet, or if one is not present, produce one in a foot which has already been abused by improper footwear. A proper shoe to obviate these conditions and accidents should be constructed as follows:

(a) An expansion top to compensate for any degree of swelling of the leg.

(b) An eighth of an inch elevation on the inner border of the soles and heels to overcome or prevent valgus.

(c) A cross bar of an eighth of an inch in the anterior metatarsal transverse arch to relieve and prevent metatarsalgia.

(d) A cushion rubber lift in the heel between the top and under lifts to give soft and jar-relieving steps when walking.

(e) A special anti-slip finish to the bottom of the sole and heel so as to prevent slipping and subsequent injuries.

(f) Rounded heel edges to prevent catching in carpet, rug or dress while ascending or descending the stairs.

(g) Must be built on anatomic principles so that the body weight is evenly distributed on the feet.

(h) The heels must be of the height most comfortable to the patient.

(i) Should be built so that they can be worn all day without requiring a change to low cut shoes or slippers.

2. Exercises:

Exercises should be practised twice daily and should not be carried to the extent of tiring the patient. Walking should be encouraged as much as possible.

Tiptoe exercises: The patient places the limbs in the attitude of moderate inward rotation, raises the body on the toes to the extreme limit, the legs being fully extended at the knees, then sinking slowly, resting the weight on the outer borders of the feet in marked varus repeating about twenty to thirty times.

B. Curative: The two types of weak feet which we commonly meet with in pregnancy and the puerperium are the spastic and the nonspastic. In the nonspastic type passive motion of the foot is painless and free to the normal limit. In the spastic type passive motion is painful and restricted. The treatment of the nonspastic type consists of proper shoes and exercises. As a rule these suffice; at times and as a last resort it may become necessary to supplement these with Whitman's braces.

In the spastic type of weak feet strapping, machine exercises, shoes and Whitman's braces are necessary. A very good method of strapping follows: one end of a strip of adhesive plaster, about fifteen inches long and three inches wide is applied to the outer side of the ankle just below the external malleolus; the foot is then adducted as far as possible and the plaster is drawn tightly beneath the sole up the inner side of the arch and leg. It is kept in this position by one or two plaster strips about the calf. Narrow strips are then applied about the arch and ankle in a figure of eight manner. Strapping should be done twice a week and continued until the spasm and rigidity have been overcome. When this has been accomplished the brace and proper shoes should then be prescribed.

Conclusions:

1. All cases of pregnancy should be instructed as to the proper care of the feet.

2. Prophylactic measures should be instituted, regardless of the presence or absence of weak feet.

3. Where neuralgic pains in the lower limbs, back, and sciatic region, and edema about the ankles are complained of, the presence of weak feet should be suspected.

4. In arriving at a diagnosis of weak feet one should always take into consideration all diagnostic means at one's disposal. It is not sufficient to note whether there is a flattening of the arch.

5. By the use of the pedograph, the determination of the level of the scaphoid, the presence or absence of the juvenile fat pad, by consideration of the quality of the muscles of the soles of the feet and finally by noting the amount of eversion of the heels and heel cords, one can record fairly accurately the status of a foot condition.

6. While the method described is not infallible, yet in it we undoubtedly have the foundation upon which we can accurately study successive changes in the foot.

7. Only by the institution of these precautions can we hope to prevent needless suffering in one of the most trying periods in the woman's life.

1018 E. 163rd Street.

Tuberculosis: a Historical Survey and a Forecast

W. W. KLEMENT, M.D.
Cincinnati, Ohio

1. From Hippocrates to Koch

Even before the Christian era there was a great deal written, both by literary men and the early advocates of the science and art of healing, concerning the consumptive, the wasted man, the cougher, the blood spitter. The ancients knew and recorded that phthisis was not to be found among savage people, but that it was a disease of those who lived in houses or exchanged commodities among one another, or those who lived in communities. In community life tuberculosis showed a tendency to reappear in certain families, generation after generation. The ancients looked upon it as hereditary, as a constitutional transmission from parent to offspring. Even physicians of today remember when heredity in tuberculosis was a well accepted fact. It is therefore enlightening to review the subject historically and see how far we have advanced.

Hippocrates, who was born about the time of Socrates (460 B.C.), described this malady as consisting of a supuration of the lungs resulting from mucus, blood or other morbid material in the lung or pleural cavity which, failing to be absorbed, was changed into purulent matter. He says, "With many persons it commenced during the winter and of these some were confined to bed and others bore up on foot; the most of these died early in the spring who were confined to bed; of the others, the cough left not a single person." In his aphorisms he states, "Phthisis most commonly occurs between the age of eighteen and thirty-five years," which holds good even to this day. Hippocrates recommended tar as a remedy—suggestive of the modern use of creosote.

The disease was considered by Galen (A.D. 130) to be an ulceration or supuration of lung tissue, the destroyed portion being discarded in the expectoration. He advised the same treatment as for ulcers of other parts. To dry up secretions he used to send his patients to dry, elevated resorts, similar to the present day course of sending to Arizona sanatoriums. A long period then elapsed before any advance was made. At the time of Columbus's voyages the disease was looked upon as a long drawn out, incurable, hereditary disease that occurred mainly in adults. Nothing was known about the cause of the malady or the pathological changes.

As late as 1614, Sylvius, who was the first to describe tubercle of the lung, attributed ulceration in the lungs to supuration and softening of tubercle. He described one variety due to purulent infiltration of the lung caused by hemoptysis or empyema and characterized by ulceration and destruction of the body of the lung; the other

variety was the result of scrofulous constitution, due to enlargement of the lymph glands in the lungs which softened into tubercles. In 1689 Morton was the first to maintain that the tubercle was a necessary antecedent of ulceration and among the first who recognized the great prevalence of tuberculosis. He says, "Yes, when I consider with myself how often in one year there is cause enough ministered from producing these swellings, even to those who are wont to observe the strictest rules of living, I cannot sufficiently admire that any one, at least after he comes to the flower of youth, can die without a touch of consumption."

The great physician Laennec was a consumptive, a pupil and companion of Bayle. In 1816 at the bedside of a girl who had heart disease, he was not satisfied with the result of listening by placing his ear directly against her chest wall; to hear the sounds better he rolled up some paper into a cylinder and held one end against the chest wall. He thus heard the sounds of the heart many times louder and more clearly. Laennec was also a pathologist, so he gave a correct definition and interpretation of the tubercle. He taught how to recognize the consumptive by examination of the chest. Tubercles could, he stated, arise from older ones, even at a distance, and could develop into structures that were much different from their original form.

An epochal discovery was made by Villemin, a French army surgeon, who inoculated rabbits with matter and sputum from tuberculous individuals. In every case he produced tubercle in the lung. Villemin's paper was published December 5, 1865. It may be classed with Koch's later contribution on the discovery of the tubercle bacillus.

Klencke in 1843 performed experiments to prove the infectious nature of tuberculosis. He injected tuberculous matter into the jugular vein of a rabbit. Six months later he found tuberculosis in its liver and lungs. Villemin also demonstrated in 1865 that tuberculosis was a disease caused by a specific agent. Injecting tuberculous material from a phthisical patient beneath the skin behind the ears of a previously healthy rabbit, he obtained the development of tuberculous nodes in this animal. If he inoculated non-tuberculous material, no signs of tubercles were produced. Villemin encountered skepticism, like most discoverers in medicine. When, in 1877, Cohnheim injected tuberculous material into the anterior chamber of the eye of a rabbit and thus demonstrated the inoculability of tuberculosis, for he saw the gradual

development of the specific tubercle, Villemin was triumphantly sustained.

Radical measures against tuberculosis were taken in Spain and Portugal. Laws were enacted for the disinfection of the clothes, beds, etc., of consumptives after their deaths. In 1839 George Sand provides an interesting side-light on the popular fear and fanaticism of the time, in a letter regarding Chopin, with whom she was traveling, and who was already a confirmed consumptive: "Poor Chopin, who had a cough since we left Paris, became worse; we sent for a doctor—two doctors—three doctors—each more stupid than the other, who started to spread the news on the island that the sick man was consumptive in the last stage. As a result there was great alarm. Phthisis is rare in these climates, and is looked upon as contagious. We were regarded as plague-infested; and, furthermore, as heathens, as we did not go to the mass. The owner of the little house which we had rented turned us out brutally, and wished to bring an action against us to compel us to limewash his house, which he said we had infected. The law of the island plucked us like chickens." In Spain the landlord demanded to be paid for the bed on which Chopin had slept, on the pretext that it was infected and the police regulations required that it should be burned.

We can here present only an incomplete death roll of a few notables who have in early life succumbed to this malady: Marie Bashkirtseff, Bichat, Henry Bunner, Frederick Chopin, Stephen Crane, John Paul Jones, John Keats, René Laennec, Sidney Lanier, Bastien Le Page, Ethelbert Nevin, Henry Purcell, Elisa Félix Rachel, Schiller, John Sterling, Laurence Sterne, Stevenson, Spinoza, Timrod, von Weber, Artemus Ward and Kirk White, Laennec, who died of consumption in 1826, declared that phthisis followed upon the formation of tubercles.

2. The Work of Robert Koch

Robert Koch was the founder of bacteriological science. He was born December 11, 1843, and died of angina pectoris May 27, 1910. He it was who isolated the bacillus of tuberculosis as the ultimate cause of the disease and he claimed he grew this bacillus out of the bodies. Then Robert Koch announced this in an address before the International Medical Congress in Berlin in August, 1890—that he had discovered a substance which conferred on animals experimented with an immunity from inoculation with the tubercle bacillus, and which arrested tuberculous disease. Enthusiasm was aroused in the medical profession, but the announcement was premature. His brilliant scientific work led the profession to the belief that the discovery would be more far-reaching in its therapeutic value than the modest statements of the scientist really promised. Scientific medical men throughout the world were anxious to fully test the therapeutic value of this new remedy. However, the hope entertained by Koch and the whole civilized world was not fulfilled. We now admit we have no remedy for this wholesale malady other than general treatment.

America also has its place in the history of tuberculosis. Dr. Edward L. Trudeau was the pioneer worker in this country, a modest and productive student of tuberculosis. Trudeau today is known mainly by reason of his sanatorium. It was on November 22, 1890, that Trudeau published that he could not at all immunize animals against tuberculous infection by first inoculating them with dead germs or with the filtered or sterilized cultures of tubercle bacilli. There was no essential difference between Koch's substance and Trudeau's. The American physician confessed that in his hands the substance did not have the desired effect. His negative re-

sults were passed over without notice. Koch made startling positive assertions and did not mean to create a sensation.

It is interesting to go further into the conclusions and experiments of Koch, the discoverer of the tubercle bacillus, who made a concentrated glycerine extract of these tubercle bacilli. It was first called Koch's Fluid, and later Koch's Lymph. It is now almost entirely known by the name Tuberculin. Koch had observed that after injecting healthy guinea-pigs with tubercle bacilli, hardening and ulceration followed at the point of inoculation; the ulcer remaining unhealed up to the time of the death of the animal. If at the time of inoculation the animal was suffering from tuberculous disease, the changes were altogether local. At the seat of injection the epidermis became necrotic and was finally thrown off, leaving a rapidly healing ulcer. If the solution was further diluted and injected at intervals of from one to two days, a notable improvement in the condition of the animal took place, leading ultimately to its recovery. It was found that tubercle bacilli so injected did not spread, and it therefore seemed certain that the effect observed was due to soluble substances that had been taken into the circulation. These results were so uniformly observed in animals that Koch was led to use the remedy in tuberculous individuals.

Koch injected into his own arm 0.25 cubic centimetre of the remedy, and described the symptoms: From three to four hours after injection there was a drawing sensation in the extremities, weakness, inclination to cough, and difficulty in breathing, which rapidly increased. In the fifth hour there appeared an unusually severe chill lasting an hour; this was accompanied with nausea, vomiting, and a rise of temperature to 39.6 degrees C. (103.3 degrees F). In about twelve hours all these symptoms decreased, the temperature became lower and on the following day was again normal. Heaviness and debility lasted for some days, and the seat of injection remained somewhat painful and reddened during this time. If, however, 0.01 cubic centimetre was administered to a person suffering from a tuberculous affection a marked general, as well as local, reaction followed. There was usually a chill, the temperature rising to 39 degrees, 40 or even 41 degrees C. (105.8° F.); at the same time pain was experienced in the extremities; a desire to cough, a feeling of great debility, and frequently nausea and vomiting, sometimes a slight icterus, were noted. In rare cases a measles-like exanthem was observed on the neck and breast.

As a matter of record Spengler (*Deutsche medizinische Wochenschrift*, No. 36, 1897) discussed the treatment of tuberculosis with Koch's product, stating that tuberculin was never entirely discarded at Davos since it was first used in 1900. There were treated with tuberculin fifty-nine patients, twenty, however, only from three to seven weeks. The whole number received nine hundred and twenty-two injections, with a total of one hundred and eighty-one cubic centimetres. In not a single instance was an untoward effect noted, although at times there was pronounced reaction.

Rembold published, in the same journal, an analysis of eighty-two cases of pulmonary tuberculosis treated in 1890-1 with tuberculin. Of these, reports were obtained concerning seventy. Of this number twenty-seven were recognized as being instances of mixed infection and thus unsuited for the treatment. All of these died—twenty-three during the first year following the treatment, two in the second, and two in the third. Of the remaining forty-three cases of unmixed tuberculosis, twelve were classified as severe, fifteen as of moderate severity and sixteen as mild. Upon the basis of this

experience the conclusion was expressed that in the case of mixed infection tuberculin is without any favorable action; and that, while in cases of unmixed tuberculosis of the lungs little was to be hoped for in severe cases, marked and permanent improvement might be anticipated in many cases of moderate severity, and almost certainly good results, even to complete cure, in the mild cases.

The cutaneous tuberculin test is of no value in adults but is of great value in children, and the younger the child the greater its value. It may roughly be stated that it is ninety percent correct in children one year of age and under, and decreases ten percent in accuracy with each added year of life. After ten years of age a positive cutaneous tuberculin test is of little or no value. The subcutaneous test is significant in those cases in which a diagnosis cannot be made by other agencies; that is, in the case that has many of the symptoms of tuberculosis and yet the physical signs or the x-ray findings are merely suspicious and not conclusive. A subcutaneous injection of old tuberculin will frequently bring out signs in the chest that are latent and produce a sharp reaction at the site of injection and a sharp rise in temperature, thus marking the diagnosis as conclusive. The test does not prove active or arrested tuberculosis, however.

3. More Recent Efforts at Bacterial Dissociation

Not only in sputum, pus of cold abscesses, tracheobronchial glands, pleural effusion and such like, can we find filtrable invisible forms of Koch's bacillus, but in reference to the early tuberculosis of infancy, such filtrable forms pass through the placenta of a tuberculous mother to the foetus. Many of these infants succumb, frequently within one to three months, without any evident cause of death being discernible. Many cases at autopsy, apart from the usual evidences of malnutrition, often show hypertrophied mesenteric or tracheobronchial glands, which do not exhibit gross or palpable tuberculous infection, yet may or may not disclose a few tubercle bacilli. In the light of recent investigations it would seem probable that they represent what is now termed "dissociation forms" of the tubercle bacillus, and grade down in sizes to microscopic invisibility. Further, these researches run parallel with recent observations made on other bacterial species.

An interesting paper by Dr. Th. Madson, the Director of the State Serum Institute, Denmark, and Dr. J. R. Morch, detailing the results obtained with sanocrysin in the treatment of experimental tuberculosis in animals, appeared recently in the *Acta Tuberculosea Scandinavica* II, 1926, No. 2, 99. In this experimental investigation two different cultures of bovine bacilli were used: (1) an old laboratory culture of low virulence, and (2) a recently isolated virulent culture. The results indicate that infection in rabbits induced by the intravenous inoculation with cultures of such different strengths, when treated with varying doses of a saline solution of sanocrysin, undergoes a certain amount of cure. The animals inoculated with bacilli of low virulence reacted violently as a rule to the treatment by sanocrysin. On the other hand it is stated that of the 150 animals inoculated with virulent bacilli and treated with varying doses of sanocrysin the amount of reaction was variable. Mollgaard explains these reactions as caused by toxins liberated either from tubercle bacilli killed or from the tuberculous tissues. It would appear that even a very small lesion produced by an organism of low virulence may give rise to a strong reaction. Treatment with sanocrysin can cause healing of experimental tuberculosis in rabbits; and although the most serviceable dosage to

be employed in tuberculosis in man is far from being solved by these researches, treatment by sanocrysin in small doses at first gradually followed by larger ones may prove favorable.

Dr. E. R. Baldwin of Saranac Lake in a paper read in Rochester, New York, discussed the use of sanocrysin, stating that since reputable experimental evidence has been adduced both for and against the use of sanocrysin, "the basis of this remedy seems worthy of discussion. In the first place sanocrysin has been said to inhibit the growth of tubercle bacilli in culture in the same amount that characterizes the action of potassium gold cyanide, namely 1 in 1,000,000. A 1 in 1,000 solution was tolerated in liquid cultures, and a 1 percent solution failed to kill all the bacilli after 24 hours immersion. No evidence has been obtained that the gold salt enters into combination with the bacillus. When the salt is administered intravenously well marked focal reactions are produced in the tuberculous tissue followed by fever." The preponderance of adverse opinion on the action of sanocrysin will soon restrict the use of this drug, outside of Denmark, but valuable lessons may be drawn that it is useless to attempt to kill tubercle bacilli in the body, for they are already embedded in the tissues and only in a minor way do they get free in the lymph or blood circulation. To attempt to break down tuberculous tissue already of considerable extent is fraught with danger. It is not likely that any agent acting upon tubercle as tuberculin does will prove to be superior to it. For internal tuberculous any agent causing inflammatory reactions has not much advantage, but some germicide combined with tuberculin may work favorably.

Recent inflammation or so-called collateral inflammation surrounding a tuberculous focus often is absorbed following merely rest and good hygiene. The means must be safe, or applied with a discretion born of experience. The first thought concerning any specific for tuberculosis should be "Can it improve on nature?" The specific has been found to act directly on the bacilli. The best explanation of the action of tuberculin and similar irritants is that they hasten and intensify oxidation and enzyme activity, which in turn affect the bacillus. Certain experiments point to a marked stimulation resulting from the injection of minute quantities of mineral salts, but exact concentration of the salts is required. There is a special concentration for each salt which appears to follow the law of Arndt: weak irritants arouse vital action, medium strengths promote it, strong doses decrease it, and the strongest doses abolish it. While chemotherapy is fascinating it is advisable to assist the natural weapons provided for our defence and await further verification.

4. Statistical Prospects

Sanguine expectations are frequently unjustified, though the wish is well founded. It is of late rather fashionable to plot decreasing curves, but please note, it appears that the bacillus of tuberculosis is so persistent that one individual out of every three has it somewhere in his body. Out of one thousand persons only three or four die from tuberculosis per annum, but there are upward of three hundred and fifty of them who are tuberculous, or that have Koch's bacillus somewhere in their organisms, although it may give rise to no symptoms whatever.

The death rate from tuberculosis is trifling as compared with the number of individuals who are tuberculous, and yet of all chronic diseases tuberculosis is the most curable. The frequency of tuberculosis is not to be doubted or minimized. The official tables of mortality

(Concluded on page 310)

Stone in the Bladder*

(Notes on Its Modern Treatment)

WINFIELD SCOTT PUGH, M.D.

New York City

History

The time honored treatment of vesical calculus has been by suprapubic cystotomy, although this cannot really be classed as an ancient operation. Desnos tells us that among 9,000 Egyptian mummies examined, there was much evidence of urological disease as calculus, tumor, etc., but not a single perineal or hypogastric scar indicative of operative interference. Neither are there any records of it among writings of the early Egyptians or Hindus.

The careful researches of Jerwin show no evidence of suprapubic cystotomy among the early Hebrews. That race, we learn, were hygienists rather than surgeons. The surgical opening of the bladder receives its first real description (in the method of John Romanes) by Mariano, a Neopolitan surgeon, in 1535. This is a perineal cystotomy, but apparently some of the early suprapubic sections were confused with that operation.

Through the Middle Ages, when ancient civilization was in a state of decay, we hear little of bladder surgery. The scribblings of the so-called beggar surgeons, also the early cutters and incisors, tell us nothing until about 1550 A. D.; except as to perineal section. At about this latter date, however, there appeared one Pierre Franco, destined to become one of the most famous incisors. In his treatise on surgery made public in 1556, he gives the case report of a child of ten in whom he was unable to remove the stone by the perineum, but succeeded by the suprapubic route. This is apparently the first suprapubic cystotomy ever performed.

The French were early students of urological conditions and suprapubic cystotomy for stone was extensively advocated by Souberlee (1824) and it is said he performed 1200 of these operations. The first suprapubic cystotomy for rupture of the bladder was done by S. D. Gross in 1851. Opening of the bladder by the suprapubic rout for drainage purposes with the formation of a fistula was placed on a scientific basis by Sir Henry Thompson of England in 1880.

The history of attempts to remove stone in the bladder by way of the urethra is filled with anecdotes most amusing, if not true. Notable among these according to Nagorsky is the description given by an early Arabian physician, Haly. A pipe of ivory or wood of proper size was introduced into the urethra and air blown into the bladder. When the latter organ was sufficiently distended, the proximal opening of the tube was tightly corked. With one finger in the rectum, the stone was forced into the vesical neck. This procedure was then followed by suprapubic pressure and the cork suddenly removed. The force of the expelled air was supposed to carry the stone along the posterior urethra and with further dilatation of the anterior urethra the stone was removed. Our only comments is that stones must have been mighty small in those days.

The minds of practitioners of the medical art, however, frequently revolved around the use of instruments designed to remove small stones by way of the urethra. Numerous appliances were devised, but nothing of importance appeared until the lithotrite of Civiale in 1824. This at first was not a crushing instrument, but merely

intended to grasp and remove small stones. Weiss later improved on this instrument by making it a triblade, both a grasping and a crushing instrument.

Napoleon III is said to have been one of the first patients treated with this instrument. In 1878, there appeared the Bigelow lithotrite, which was a much more powerful instrument. This was soon followed by that of Chismore which also permitted of lavage without removing the instrument. Perhaps the most powerful instrument was that devised by the late Dr. William Forbes of Philadelphia. I have seen the later used by its inventor many times, and while it worked pretty well in his hands, it was terrible when utilized by the inexperienced. One case done by a well known surgeon died shortly after the stone was crushed. The least that one can say of these instruments is that they were terribly brutal. It does not make any difference how skilful the surgeon may be, he cannot see what is on the end of the lithotrite, and surgery in the dark is clumsy at best.

It was Nitze, the gifted genius of Berlin, who in 1880 gave us the cystoscope and he himself devised a lithotrite to crush and remove small stones through it. Unfortunately his idea along the latter line was abandoned and little attention given to cystoscopic lithotripsy until the instrument of Hugh Young appeared about twenty years ago. The idea of crushing a stone within the bladder would seem to be ideal, but it has been looked at rather askance by surgeons until recently.

The introduction of the Lothstein cystoscopic lithotrite was a brilliant advance in the urologic field, since which time numerous others have appeared. Lothstein stated that his instrument combines a perfect examination cystoscope with a thoroughly practical and efficient stone crusher as well as an irrigator.

The Indications for Cystoscopic Lithotripsy

It is absurd to say that any one operative procedure is ideal for every case. It reminds one of the long discussion on prostatectomy. In our experience we believe cystoscopic stone crushing should only be used:

1. When the stone is of moderate size.
2. When it is not partly lodged in a diverticulum.
3. When it is not of too great density.
4. When there is not marked prostatic obstruction.
5. In the very small contracted bladder.

It is not necessary to go into any further detail as all the above conditions are readily determined by any competent physician.

About a year ago we were called in consultation by a young physician who had attempted to crush a very large stone in the bladder. The stone did not crack at all and the surgeon was suddenly startled to find the handle and shaft of the cystoscopic lithotrite in his hands, while the jaws remained in the bladder. A most annoying situation to say the least. There was nothing to do but a suprapubic cystotomy to remove the jaws of the instrument and the stone.

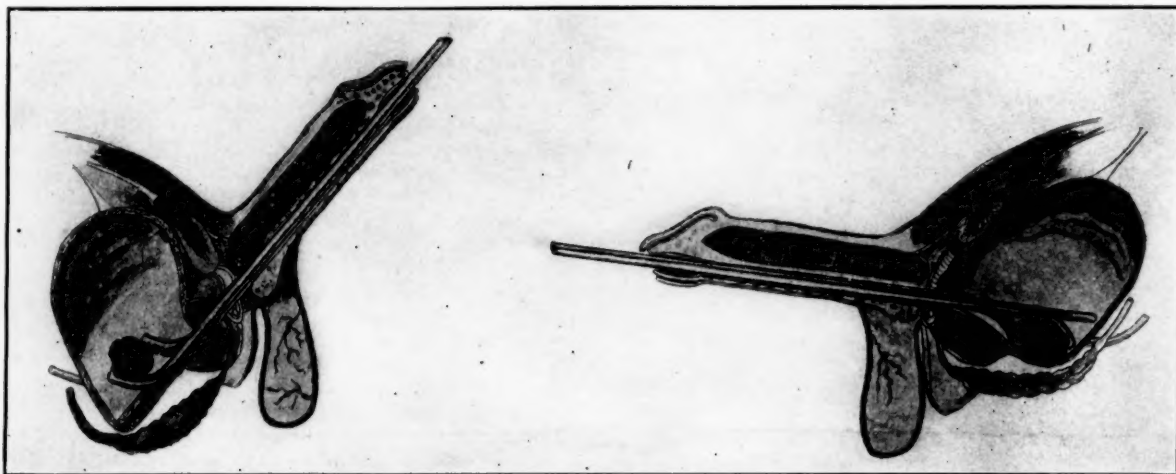
The Technic of Cystoscopic Lithotripsy

Unfortunately several articles on this subject have appeared that have made it seem trivial. Anything may be simple in the hands of an expert, even such an operation as gastroenterostomy or nephrectomy, but this is

* Excerpts from a clinical lecture by Dr. Pugh at City Hospital, New York.

poor advice to pass along to the novice. Over the last twenty-five or more years, I have crushed a great many stones with the lithotrite and still think it is not a simple technic. The old lithotrites have now been relegated to the shelves of the museum and their stories to the archives of urologic history. With the cystoscopic lithotrite,

prostate, the second position must be employed. The instrument should be turned over, the proximal blade being held close to the bladder neck while the distal is extended along the vesicle floor. With the aid of the light it is now possible to maneuver the stone with the blades into almost any position we decide. At times one will find



Cut No. 1—Stone in pouch of bladder grasped with instrument in upright position.

Cut No. 2—Stone grasped with jaws of lithotrite turned down.

a new day has dawned. A new and simplified technic has appeared, but it of course requires considerable practice before one attains a degree of skill.

All doubt having been cleared up in the surgeon's mind as to the advisability of cystoscopic stone crushing, what shall we do? First we utilize sacral anesthesia and find it most ideal for these cases. As soon as the injections are completed, turn the patient over and pass a catheter, thoroughly irrigating his bladder. It is our experience, in practically all of these cases, that one finds a large amount of thick pus and blood clots which first must be gotten rid of. In from fifteen to thirty minutes after the sacral anesthesia, we can introduce the instrument. The lithotrite is well lubricated and passed into the bladder just as a sound is introduced. If a tight urethral opening is found, a meatotomy must be performed. When the bladder is reached it is advisable to fill it through the instrument with as much boric acid solution as it will hold. It has been said that great difficulty will be experienced in the contracted bladder where the organ has a capacity of less than 50 cc., and this is pretty generally correct. One must be very sure that he is in the bladder as in old age the prostatic urethra is considerably extended even in those cases where there is no marked hypertrophy of the gland.

There are two principal maneuvers for catching the stone. When the instrument is first introduced the concavity of the blades will be anterior, and when the light is turned on the stone is usually lying in the trigone to one side of the instrument. A distinct click is usually felt. If we now open the blades of our instrument and hold the shaft almost vertical we can see the stone drop into the forceps, where it is then crushed. At times we will only bite off a piece and the larger mass will roll away. We must continue our search for fragments until all are crushed so small that they can readily be removed by the evacuator. We also find the Young evacuator to be of great assistance at times.

Where the stone cannot be grasped by the instrument in the position noted, due to a low bladder and a high

prostate, the second position must be employed. The blades of the instrument jammed by a mass of calculus material. Under the circumstances, the lithotrite must be removed and reintroduced. All the flushing in the world will not clear up this debris. It must be remembered also that from time to time one will have to stop the crushing in order to clear the bladder of blood. No matter how careful one may be, some trauma will always occur. After the cystoscopic lithotrite is withdrawn, it is advisable to introduce a Young evacuator and again thoroughly wash out the remaining debris.

After treatment: This largely consists in the use of a retention catheter to allow free drainage and the use of urinary antiseptics with copious draughts of water. In the last few years we have utilized this operation successfully on twenty-five occasions. We shall go a little more into detail as the cases come in for operations.

Heliotherapy

Natural heliotherapy using sunlight during May, June, July and August produces good results, except on rainy or cold days, then artificial ultra-violet light is better. Artificial ultra-violet light, however, allows more accurate regulation of dosage. The best artificial ultra-violet light is that from a mercury vapor quartz lamp.

The best technique is that of Edinow and Hill.

Rayed ergosterol diluted in oil and standardized to its potency relative to cod liver oil will soon be a valuable means of giving suitable doses of vitamin D.

At present the ultra-violet rays from the mercury vapor quartz lamp, a very powerful ray, in the hands of trained medical men, offers one of the best methods of treating conditions where vitamin D is already or will be deficient.—Nicholson, *Archives of Pediatrics*, July 1929.

Cancer of Prostate With Bony Metastases

These cases show how difficult it is to diagnose malignant disease of the prostate from clinical findings, whereas the radiographic appearances definitely confirm any suspicion. I intend, in future, in all my cases of enlarged prostate, to have the patients examined by X-rays for any possible evidence of secondary metastases in the pelvis and vertebrae.—Evans, *Prac. Royal Soc. of Med.*, Aug., 1929.

Gall-Bladder Infections

G. S. FOSTER, M. D., Surgeon

AND

J. DEITCH, M. D., Asst. Surgeon

LUCY HASTINGS HOSPITAL

Manchester, N. H.

Gall-bladder surgery always follows some form of infection, acute, subacute or chronic, for all pathological conditions of the gall-bladder are the result of an infection. This infection may have occurred years before without development but the scar remains and forms a nucleus for the trouble later on. There is one exception to this statement as we now view the subject, malignancy. Malignancy as occurring in the gall-bladder is so rare that it may be excluded. Of course extension of malignancy to the gall-bladder from the liver or adjacent parts does occur more often but the present day view would exclude this type of gall-bladder pathology from the infectious realm. Thus for the consideration in this paper we will not include malignancy. If we view disease of the gall-bladder from this simple classification, acute, sub-acute and chronic, we will take up these in this order.

Acute Cholecystitis.—Of one hundred and thirteen cases of disease of the gall-bladder we find fourteen in this class or approximately thirteen per cent. Of these fourteen cases fifty-seven per cent which is seven per cent of the total number of cases reviewed were not purulent. These eight cases showed a pathology of a thickened gall-bladder wall, friable and covered with adherent omentum. As the omentum was peeled away it left a granular bleeding wall. The omentum was not firmly adhered and could be cleaned away from the gall-bladder wall quite easily showing that it was of recent occurrence so that the local pathology was of short duration. The red, granular, friable gall bladder wall was sufficiently evident to place these cases in the acute class without pus or abscess of the gall-bladder. Forty-three per cent of this class which is five per cent of the total number of cases reviewed, pathologically revealed, in addition to the adherent omentum, a granular, bleeding gall-bladder wall and friability and a purulent content within the bladder. This would warrant one in believing that the infection had progressed upward from the intestinal tract by contiguity.

One of the cases in the acute class had a ruptured gall-bladder wall and a concomitant local, well walled off peritonitis. Here the omentum had faithfully done its work and prevented a general infection of the peritoneal cavity. Thus six per cent of the cases in this class showed, in addition to pus confined to the cavity of the gall-bladder, an extension through the break in continuity of the wall and an involvement which produced a localized intra-peritoneal abscess. This is less than one per cent of the total of the cases reviewed in this series.

In summing up these cases of acute cholecystitis it will be seen that thirteen per cent of all the cases reviewed were in this class. Of these thirteen per cent fifty-seven per cent were without abscess formation, forty-three per cent did have abscesses of the gall-bladder and of these purulent cases less than one per cent had ruptured. This forty-three per cent showed a fulminating type of direct intestinal infection by contiguity. In other words seven per cent of the total number of cases reviewed showed recent, short duration, infection of a severe type. Half of this seven per cent, no doubt,

were contiguity infections from the intestinal tract while the other half could have originated as hematogenous or lymphatic infections. All of these cases showed a lymphadenitis and extension upward toward the pancreas. Two of these cases showed extension into the pancreas, one which revealed a very hard pancreatic head with a rosy color, while the other case revealed a very large and beefy red pancreatic head. This latter case was also diagnosed as a secondary, acute pancreatitis limited in degree. One other case revealed a distended, reddened and swollen lymphatic channel extending from the gall-bladder to the head of the pancreas. This case was also diagnosed as a secondary, pronounced lymphadenitis.

Chronic Cholecystitis.—Of the cases herein reviewed we find thirty-four in this class or thirty per cent of the total. In other words approximately one-third of this series were in the chronic class. Nearly every one of these cases made two chief complaints upon admission to the hospital, a dull aching pain in the right upper quadrant of the abdomen and dyspepsia or gaseous eructations for an hour or two after meals. Many of the cases described this last complaint as "indigestion."

In detail these complaints were as follows:

Dyspepsia the chief in eight cases;

Indigestion the chief in five cases;

A dull, aching pain in the right upper abdomen the chief in twenty-five cases;

Pain beneath the right shoulder blade the chief in four cases. One of these patients stated that this pain was often beneath the left shoulder blade.

Persistent vomiting about one hour after meals the chief with one patient.

Gaseous eructations for one or two hours after meals the chief in six cases.

One patient coming under this type of gall-bladder disease had previously had an operation on the gall-bladder without any relief from the symptoms present at that time.

Dyspepsia and indigestion accompanied by a dull, aching pain in the right, upper abdomen was complained of by twenty-five of the thirty-four cases. In other words with the chief complaint as one of these three, the last of the three was most frequently mentioned.

In so far as duration of signs and symptoms were concerned it was found that fourteen had been troubled for one year; seven for two years; six for three years; one for four years; two for five years; one for seven years and three for ten years. Thus it is seen that the duration of the trouble was from one to ten years while in twenty-seven or approximately eighty per cent of the cases it had occurred within a three year period.

Operation.—In twenty-one or in a little over sixty per cent of the cases a cholecystotomy was performed and drainage established. The drainage tube was retained in situ for eight days and following the removal the wound was left to gradually heal over and close. In thirteen or a little over thirty-eight per cent of the cases a cholecystectomy was performed. Of these thirteen cases eleven of them were immediately closed and in two

cases a yard of strand of two inch gauze pack was placed about the cystic stump and against the liver edge because of the oozing which persisted and could not be controlled otherwise. Cholecystotomy and drainage was performed in the greater number of these cases because of the complicating existence of pathology in the pancreas, lymph channels or liver as seen at the time of operation. In other words where any pathology existed in these parts it was felt that in addition to the operation itself in emptying the gall-bladder the concomitant pathology demanded free drainage for some time rather than removal of the gall-bladder without establishing any drainage. This seemed the safer route to follow and the following up on these cases has proven that this was a conservative and safe move.

Summary.—At the time of operation the following gross pathology was found in the gall-bladder, pancreas, lymph channels and liver. Of the thirty-four cases twenty-one or approximately sixty-two per cent showed a markedly thickened wall. Nine cases or twenty-six per cent revealed a hardened pancreatic head. Twenty-four or seventy per cent of the cases had adhesions about the gall-bladder. Inspissated bile was found in twenty-five or approximately seventy per cent of the cases. The duodenum was found adhered to the gall-bladder wall in nine or twenty-six per cent of the cases. Two cases or six per cent revealed a markedly distended gall-bladder. The omentum was found adhered about the gall-bladder in four cases, a little over eleven per cent. Enlarged lymph ducts and glands were noticed in seven cases, twenty per cent of those in this class. An hour glass gall-bladder was found in one case, approximately three per cent. The stomach was found adhered to the gall-bladder in four or twelve per cent of the cases in this class. Either an atrophied gall-bladder, a thin walled gall-bladder or an enlarged liver was found in approximately three per cent of the cases.

This percentage summary of the chronic cholecystitis cases reveals a rather interesting chain of pathological findings. With a chronic inflammatory condition existing over such a long period Nature has clearly shown how this, that and the other possibility of an acute exacerbation coming on may be prevented by an attempt to fully fortify against the extension of this trouble and an attempt to immunize each individual through the lymph channels. This protective factor clearly stands out as shown by the rather high percentage of thickened gall-bladder walls and the use of adhesions as a prophylaxis against further extension. Also the very co-operative action of the lymph system as well as the pancreatic head in taking on some of the work thus relieving the gall-bladder itself for the time being is shown. By these pathological findings we can also see the willingness of the omentum to cover the trouble and in extreme need even the duodenum and stomach together come into line as protectors.

In sixty per cent of the cases of this class where drainage was established this drainage was continued for an average of eight days at the end of which time the drainage tube was removed and the wound permitted to drain freely until it finally healed over. In all of these cases where there was any lymphadenitis, hardening or enlargement of the head of the pancreas and also where any purulent material was present in the gall-bladder drainage as a routine was instituted.

Cholelithiasis.—This type of gall-bladder disease was found present in sixty-five of the one hundred and thirty-two cases collected. Thus it is seen that fifty-seven and four-tenths per cent of the cases collected had stones in the gall-bladder. This shows what a relatively large

number of gall-bladder diseases show the tendency toward stone formation. This is merely another method Nature institutes for the purpose of solidifying and encasing infective organisms for the time being, preventing their growth and secondary extension.

Diagnosis.—In this group of sixty-five cases where stones were present in the gall-bladder additional diagnoses were made as follows:—

- Ruptured gall-bladder, one case;
- Malignancy of the pelvis, one case;
- Ventral hernia, one case;
- Abscess of the gall-bladder, five cases;
- Pancreatitis, two cases;
- Perforation of the gall-bladder, one case;
- Toxic goiter, one case;
- Stone lodged in cystic duct, two cases;
- Stone in urinary bladder, one case;
- Chronic appendicitis, three cases;
- Cystic degeneration of the gall-bladder wall, two cases;
- Urethral caruncle, one case;
- Lymphadenitis, one case.

A brief review of these co-existing conditions merely emphasizes the importance of making a very complete and exhaustive physical examination in every case presenting itself for diagnosis. Too often a multiple pathological condition is present in these patients and it is their privilege to have every abnormal condition found and diagnosed. At every operation when possible without additional hazard to the patient a routine of complete exploration of the abdominal and pelvic cavities has been established.

It is very interesting to note in this series of cases the existence of pathology other than of the gall-bladder such as malignancy of the pelvic organs and stone in the urinary bladder. Also it is quite as interesting to note that in nearly five per cent of these sixty-five cases three had a co-existing chronic appendix. It is also very interesting to note that but one case, one and a half per cent, had icterus. This shows that icterus bears but little influence in making a diagnosis of cholelithiasis. Quite as marked is the fact that but one case had lymphadenitis, further supporting the theory of Nature locking up the infective organisms by condensation, thus eliminating any necessity of lymph channel support. This theory is further given support since only five cases of abscess of the gall-bladder co-existed. In each of these cases the stones were bathed in pus the culture of which gave no growth. Cystic goiter was present in one case. This patient came in *in extremis* and in the severe pain of typical gall-bladder colic. The pain was so severe that an immediate operation, even in the face of a poor heart and extreme nervous condition with typical toxicity of goiter origin, was necessary. This patient died twenty-four hours later. She ran a pulse rate of 180, respirations 48 and temperature 105.6° by rectum. Death was evidently from the goiter and not any operative procedure.

Duration.—Of the sixty-five cases with stones in the gall-bladder the period over which the symptoms had been present varied from one year to twenty years. Thirty cases or forty-six per cent gave a history of one year. Nine cases or thirteen and one-half per cent gave a history of two years. Ten cases or approximately fifteen per cent gave a history of three years. Two cases or three per cent gave a history of seven years. One case or one and a half per cent gave a history of eight years. Five cases or a little less than eight per cent gave a history of ten years. Two cases or three per cent gave a history of twelve years. One case or one

and a half per cent gave a history of fifteen years, and three cases or four and a half per cent gave a history of twenty years. The largest number of cases came within one year. The two and three year period showed the next largest group. From this time on the number of cases of long standing were few and scattered. This fact might lead one to believe that the present day educational methods of diagnosis as grasped by the public have yielded good fruits and brought the patients to seek assistance early.

Operation.—Of the sixty-five cases in this series with stones in the gall-bladder we did a cholecystectomy in thirty-two or approximately fifty per cent. In ten of the cholecystectomy cases or a little less than one-third a yard of strand of two inch gauze pack was left in merely to control venous oozing and not to establish protective drainage. The remaining twelve cases were closed up tightly. In thirty-three or approximately fifty per cent of the cases under this head cholecystotomy was performed and drainage established by suturing a rubber tube into the gall-bladder and allowing it to remain in situ for eight days. At the end of this time the tube was removed and the wound permitted to gradually granulate over and heal. The cases selected for cholecystotomy and drainage were those where pus was found in the gall-bladder or where the pancreatic head or lymph channels were also involved. The drainage thus introduced permitted subsidence of these co-existing conditions. Appendix involvement was found in four or a little over six per cent of the cases and the appendix was removed in each instance.

It is very interesting to note how much more frequently cholecystectomy was used as compared with the treatment of the same type of case ten years ago. It is also very interesting to note how many more of these cases are closed without any drainage. The results obtained seem to warrant this advance in technique.

Pathology.—It is very important to note the multiple pathology associated with these cases of stones in the gall-bladder. The gall-bladder was distended to the size of a large cucumber or moderate sized grape fruit in twenty-three or thirty-five and one-half per cent of the cases. Adhesions were present in twenty-eight or forty-three per cent of the cases. Of these cases with adhesions three showed the omentum adhered to the gall-bladder, two showed the stomach adhered to the gall-bladder, six showed the duodenum adhered to the gall-bladder. The pancreatic head was hard and nodular in seven or approximately ten per cent of the cases. Lymphadenitis was found present in two or three and one-half per cent. A very thick gall-bladder wall was found in thirty-four or fifty-two and one-half per cent. Stones were found in the cystic duct in fourteen or twenty-one and one-half per cent. A very thin walled gall-bladder was found in three or four and one-half per cent. Pus was found in five or seven and one-half per cent. Pelvic malignancy was found in one case, atrophied gall-bladder in one case and the gall-bladder wall was found perforated by a stone in two cases. Stones were found in the common duct in two cases or three and one-half per cent. The number of stones found varied from two to nine hundred and ninety-nine which were found in one case. Several of the cases had a large number of stones as one had two hundred, another two hundred and eight, another five hundred and sixty, one four hundred, one, one hundred and twenty and another one hundred and fifty.

In the cases where the stones were few they were large and well faceted. Where the stones were very numerous they were small and round. In the case with

nearly one thousand stones these stones were round, yellow in color and the size of a pin head. The two perforated cases had very large well faceted stones which had burrowed through the wall.

TOTAL NUMBER, 113 CASES:

CLASSIFIED

Acute Cholecystitis	Chronic Cholecystitis	Cholelithiasis
14 cases 13% Non-purulent 8 cases 57% Purulent 6 cases 43% Ruptured, Gall-Bladder 1 case 6% Lymphadenitis 14 cases 100% Pancreatitis 2 cases 13.5% Operation: Cholecystotomy and Drainage 14 cases 100%	34 cases 30% Chief complaints, dyspepsia, indigestion, pain in right upper quadrant, gaseous eructations. Duration, 1 to 10 yrs. Operation: Cholecystotomy and Drainage 21 cases 60% Cholecystectomy 13 cases 38% (Complete closure—11 cases) (Gauze Pack—2 cases) Pathology (Gross) Thickened gall-bladder wall 21 cases 63% Pancreatitis 9 cases 26% Adhesions 24 cases 70% Distended gall-bladder 2 cases 6% Lymphadenitis 7 cases 20% Hour glass gall-bladder 1 case 3% Atrophied gall-bladder 1 case 3% Enlarged liver 1 case 3%	55 cases 57% Additional diagnosis: Ruptured gall-bladder 1 case 1.5% Pelvic malignancy 1 case 1.5% Ventral hernia 1 case 1.5% Abscess of gall-bladder 5 cases 7.5% Toxic goiter 1 case 1.5% Urethral calculus 1 case 1.5% Urethral caruncle 1 case 1.5% Chronic appendix 5 cases 4.5% Pathology (Gross) Perforation 1 case 1.5% Stone lodged in cystic duct 1 case 1.5% Stones in cystic duct 14 cases 21.5% Pancreatitis 2 cases 3% Lymphadenitis 1 case 1.5% Icterus 1 case 1.5% Abscess gall-bladder 5 cases 7.5% Duration: 1 to 20 years Operation: Cholecystectomy 32 cases 50% Cholecystotomy and Drainage 23 cases 50% Number of stones: 2 to 999.

Mortality.—In the cases with stones in the gall-bladder five died. These five cases were admitted in *extremis* and the operation was done as an urgent expedient with very little hope held out for recovery.

Case No. 21209, was admitted with severe gall-stone colic complicated by a toxic thyroid. Cholecystectomy was done under local analgesia. The patient ran a pulse of 180, respirations of 48 and a temperature of 104.6 for the following twenty-four hours when she died from the toxic goiter and secondary heart. The goiter had been present for ten years.

Case No. 497. This case had persistent vomiting, which could not be controlled, and even with institution of rectal feeding she very rapidly became emaciated and died on the ninth day after operation.

Case No. 347 was admitted with a markedly dilated heart of ten years standing. He was a very poor operative risk and died of cardiac dilatation on the day following the operation under local analgesia.

Case No. 21466 was admitted from a tuberculosis sanatorium where she had been confined during the past eighteen months. She was suffering from an acute, general, miliary tuberculosis and was a very poor risk. Her surgical condition was very acute and a cholecystectomy was done under local analgesia. This patient lived twelve days and her operative field healed normally but she died of the tuberculous condition. Autopsy confirmed the diagnosis of general, miliary tuberculosis.

Case No. 21485 was admitted with a severe gall-stone colic, which had persisted for four days. Following the cholecystectomy under a general anaesthetic she reacted well and was doing very nicely when suddenly on the fifth day she died as the result of a pulmonary embolism.

This shows a mortality of seven and one-half per cent in this series of gall-stone cases. However, when we take into consideration that three of these cases were very poor surgical risks and only as an extreme emergency would in any instance be considered for operation and in reality did not die of the operation, the mortality survey is not so bad as it might seem. Facing all cases as we do when admitted, many times *in extremis*, operations are forced under conditions which are in themselves serious. However, this seems to be the fate of one doing general surgical work, for one feels bound to try to help even when all odds seem against one.

Tuberculosis

(Concluded from page 304)

are published in different cities and countries; but the percentage due to tuberculosis is still nothing as compared with the enormous number of cases that do not end fatally. Compare the mortality of tuberculosis in the official statistics with the morbidity of the same disease. While the mortality from tuberculosis continues to decrease, its morbidity—the incidence of the disease—due to earlier and better diagnosis and prompt reporting of cases, may be expected to increase a little. This fact donates lines of definite progress.

In Great Britain the claims that a lower mortality is the result of preventive measures mostly during the past quarter century are contested by Angus Kennedy as not justifying the expenditure of labor and money. This acts as a cold douche to sanguine statisticians, yet an examination of the mortality statistics during the past two hundred years shows that it was 14% in 1721, 25% in 1821, 12% in 1871 and that since there has been a further reduction of 3%. The great reduction was in the time of our grandfathers, before the era of preventive measures. Dr. Kennedy considers the fall in the mortality in England since 1821 to be due to the lessened virulence of the bacillus and increasing resistance of the race. The disease could be eliminated by cultivating the eugenic conscience.

There is today an enhanced study of childhood or juvenile tuberculosis. Interest, study and investigation, however, has not yet resulted in a great increase in our knowledge of the subject. Our ideas, for example, of hilum tuberculosis are still in a somewhat unsystematic state. Real interest must eventually result in progress in every phase of investigation.

Tuberculosis still kills more persons between the ages of 18 and 40 than does any other disease, says Dr. Kendall Emerson of the National Tuberculosis Association. "And statistics show," he continues, "that it is increasing among adolescent girls, who have a death rate twice as high as boys of the same age." Dr. Emerson is managing director of the Association. Records show that the tuberculosis death rate has been cut two and a half times since the Association was organized twenty-five years ago.

Tuberculosis is common among the working classes of the less strenuous types, such as needleworkers, barbers, hucksters and others, and some engaged in business in a small way. Some are housewives and a few are teachers and students. Heavy laborers, such as stone cutters and miners, are conspicuous by their absence, due to the fact that these people do not come to the clinics. The patients either come of their own accord, or are referred by various social agencies or sent by physicians for diagnosis.

Clifton and Vine Streets.

Cardio-Oortic Syphilis

Both the difficulty in diagnosis and the disappointing results of antisiphilic treatment in cardio-aortic syphilis were referred to by those who took part in the discussion on this subject at the meeting of the British Medical Association, a report of which appeared on p. 330 of our last issue. There is a general consensus of opinion that the common cardio-vascular syphilitic lesion is an aortitis. This often gives rise to no symptoms whatsoever, and is only discovered post mortem in a patient who has died of some other disease. Sometimes, however, the aortitis leads to aneurysm of the aorta—perhaps the most distinctive of the syphilitic lesions, since it is so rarely due to other causes. Sometimes the process involves the root of the aorta producing incompetence of the aortic valves, or leading to partial obstruction of the orifices of the coronary arteries with its sequel angina. Aortic incompetence is, however, also a common result of rheumatic infection, though it is then generally associated with mitral stenosis. Similarly coronary arterial disease may be a part of the general degenerative process accompanying senescence, and the resulting ischaemic fibrosis is of a similar nature to that produced by syphilis. Age, therefore, is an important consideration in the diagnosis. Rheumatic heart disease is essentially an affection of youth, while atheromatous changes appear late in life. Syphilitic heart lesions, on the other hand, generally become manifest between the ages of 35 and 50, and the sudden appearance of anginal symptoms or the discovery of aortic regurgitation, in a previously healthy subject, in middle life, should at once arouse suspicions of a possible syphilitic aetiology. The Wassermann reaction is less helpful in diagnosis than the casual observer might anticipate. As several speakers pointed out, symptoms of heart disease plus a positive Wassermann are by no means conclusive of cardio-aortic syphilis, and still less does a negative Wassermann exonerate syphilis as the casual factor. The symptoms of cardiovascular involvement do not generally make their appearance for 15 years or more after the primary infection. But, once they have appeared, the progress of the disease is often rapid, and it is unusual for the patient to live for more than two or three years after the condition is first diagnosed. By thorough anti-syphilitic treatment of the primary infection we may hope to prevent the development of cardiovascular lesions; but when once those lesions can be recognized, neither arsenic, mercury, nor iodides will give more than a temporary relief. The treatment then becomes that of heart failure, and antisiphilic remedies are a secondary consideration.

It is possible that the future may have in store new developments in the clinical outlook on cardiac syphilis. Warthin has been able to demonstrate the presence of spirochaetes in the heart muscle of a series of patients who died suddenly after a brief period of ill-health—generally less than 48 hours. These cases he regards as examples of malignant exacerbation of latent syphilis. He has also demonstrated certain more chronic lesions of the heart muscle which he believes to be pathognomonic of syphilis, and is of the opinion that syphilitic myocarditis is a much more common condition than is generally believed. At the present time there is no link between these pathological findings and the clinical manifestations, but the evidence is sufficiently definite to suggest that it may become necessary to modify our present view of cardiovascular syphilis as being essentially an aortitis.—*The Lancet*, August 24, 1929.

Thrombosis

Dr. W. Cramer said that in the occurrence of thrombosis, as seen clinically, two entirely distinct processes took place, as shown by the microscopic structure of a thrombus, which, as a rule, was a mixed one, and consisted partly of a mass of agglutinated platelets and partly of a blood-clot. The formation of a blood-clot, which involved the formation of fibrin from fibrinogen, occurred as the result of the disintegration of blood-platelets. Platelets disintegrated when they came into contact with a water-wettable surface, and as a result of this disintegration a coagulating agent, capable of transforming fibrinogen into fibrin, was liberated. This coagulating agent was not liberated as the result of an agglutination of platelets. The clinical process of thrombosis began as an agglutination of platelets. (A number of factors which might be concerned in this process were discussed by the speaker.) The mass of agglutinated platelets presented a water-wettable surface, which induced a disintegration of platelets with the formation of a clot. The process of thrombosis as seen clinically was therefore a slow one. There might be a variety of causes for it, and it might be induced many days before the clinical signs of thrombosis made their appearance.—*Proc. Royal Soc. Med., Mch.*, 1929.

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A. M. A. Finances and the Indexing of the World's Medical Literature

The attempt of certain influences in the American Medical Association to enforce a reactionary policy, with respect to the indexing of the world's medical periodicals, suggests a consideration of the financial resources of the Association.

In our October issue we discussed the matter from the standpoint of progress, precedent, tradition and scholastic ideals.

It is now possible—in times happily past it would have been impossible, for reasons which it would be best not to resurrect—to say something definite about the Association's finances.

The net wealth of the Association on December 31, 1928, was something over two millions of dollars. The invested and uninvested reserve amounted to \$888,531.72. "We have," say the trustees, "been careful to build up a surplus as large as could be accumulated. . . ." The net income for the year 1928 was \$226,461.79.

There is no phase of the Association's activities more important in professional eyes than the complete indexing of the world's medical periodicals. That there should be any attempt at standpatism or retrenchment in this domain, in view of the Association's large resources, is a painful thing to reflect upon.

The argument that the existing medical libraries in the United States do not at present receive all the world's periodicals lamely assumes that they are all static insti-

tutions, as its sponsors would seemingly wish the American Medical Association to be, and incapable of growth and coordination.

There is no reason why the construction of a new building in Chicago upon land already held by the Association should curtail the publication of a complete literature of research, the meaning of which precious key to daily practice, to writing and to progress is patent to every intelligent man. The cost of the new building can be spread over a long period, whereas the index, one of our greatest medical treasures, is an immediate and indispensable necessity, demanding imperatively the expenditure of adequate sums, without interruption, to-day and to-morrow.

If the need should arise, the Constitution provides that additional funds may be secured through an assessment of ten dollars on each member (\$983,070). Moreover, subscription and fellowship will cost seven dollars next year, which will mean an increment of about \$197,000 in the Association's income.

The force employed in the development of the index (*Quarterly Cumulative Index Medicus*) now includes approximately fifteen employees in the headquarters office of the American Medical Association, and four employees, whole or part time, in the Army Medical Library in Washington. This meager force would perhaps have to be doubled in order to make a complete job of the world's periodical medical literature. About 1,400 periodicals are now covered—many only in part—while the number completely neglected runs to several hundreds more. "The secular literature available in the Congressional Library is also scanned for articles in non-medical periodicals that may have real significance" (Editorial *J. A. M. A.*, Sept. 14, 1929). Thus we find a number of articles, by Fishbein, in such journals, listed in the 1928-9 index, while important medical literature is neglected. In the words of President Thayer, at the July Session of the Association, "There is much that is really important for the student of special subjects, and nowhere is it gathered together."

The trustees can contemplate with equanimity a loss of \$34,276.85 for the year 1928 on the Association's group of scientific periodicals (other than the *J. A. M. A.*). But the index is worth a greater "loss."

No narrow censorship can assume undisputed sway in the discharge of such a grave and responsible task. The published views of Oliver Wendell Holmes, in an obscure and short-lived journal, on the subject of childbed fever, were bitterly repudiated by his contemporaries. Only catholic-minded executives are wanted here. He of the Brahmin caste must, if need be, be scourged from the temple.

No great sum is at present expended in the compilation of the index. We challenge the Association to reveal the amount of the Carnegie subsidy and its own grudging contribution.

Saratoga

Nine years ago, at the request of the New York State Conservation Commission, the editor made an intensive study of the Saratoga Mineral Springs and Baths, the results of which were published in booklet form by the Commission and widely disseminated.

The chief difficulty encountered by the editor in the course of his study was an almost total lack of contributions to the periodical and textbook literature of the day bearing intelligently upon modern mineral hydrotherapy. Baruch stood practically alone in his thoroughly scientific approach to the subject.

Of metabolism studies at Saratoga there were none.

The editor has not studied the recent literature and this lack may have been more or less remedied since 1920. But it is obvious that there is great need to-day of laboratory and clinical researches that would rationalize the amazingly efficacious therapy afforded by the waters, whether used externally or internally.

The editor was vastly impressed by the effects of the baths upon cardiac patients. He went to the baths a skeptic on this point but completed his study with the conviction that there is hardly anything in the whole range of successful therapeutics more valuable than this type of treatment. The rationale of the method was set forth in the report to the Commission and was based in large measure upon the wholly admirable work of Baruch.

Certain conclusions reached by the editor at the time of this study he hopes to see realized under the present wise régime at Albany. Some of those conclusions were that modern laboratory and clinical facilities must be established at Saratoga, that a scientific literature must be created, and that there must be a highly qualified medical director for whom a chair of mineral hydriatry should be founded by the Medical Department of Union University. It goes without saying that the scientific development of Saratoga must be under unhampered educational control.

Governor Roosevelt's great interest and all other signs of the times point to a realization of the dreams of a great genius in American medicine—Simon Baruch.

Smoke and Cancer

When it is borne in more fully on the minds of our people that the smoke nuisance is probably related in some way to cancer there will be more action. It is a fact, says Health Commissioner Shirley Wynne, that in regions where heavy smoke prevails the cancer rate is high. C. E. Green, studying the problem in England, found that "The excessive presence of SO_2 gas from the use of coal with a high sulphur content coincided with the highest incidence of cancer." The work of Jerome Meyers for the New York City Department of Health tends to support Green's findings, for he found that "Those sections of Staten Island exposed to smoke fumes and gases show a higher cancer death rate than those not so exposed. House-heating and chimney ventilation are also important, as gases and fumes from these sources may bear a relation to cancer incidence as found in our districts."

It would seem that the specific influence of smoke upon experimental animals known to be prone to cancer, such as mice, could easily be determined in the Health Department's laboratories. The cancer incidence in such animals kept free from smoke, and in those subjected to its evil effects, should be studied.

Commissioner Wynne deserves the highest commendation for his successful efforts toward abatement of the smoke nuisance, for, aside from the question of cancer, there is the matter of broncho-pulmonary deposits of unconsumed carbon and tar, and the relation of sunlight deprivation to rickets.

Fernand Vidal

The world has lost one of its greatest clinicians, Professor Fernand Vidal. His clinics at the Cochin Hospital, Paris, were attended by students from all parts of the world. Perhaps we know him best for his discovery of the reaction for typhoid. On June 19, 1903, he announced an important contribution, on the retention of sodium chloride in cardiac edema, and in collaboration

with Javal, on June 26, 1903, he published an article on the "cure by dechlorination." He proved the rôle played by sodium chloride in the production of edema in nephritis. His teachings cover almost every disease. His work on cystodiagnosis was important. He had a remarkable didactic gift. His usual method was to devote an hour to one patient and the discussion was built up on this clinical study.—M. W. T.

Treatment of Peptic Ulcer

One great difficulty in the medical treatment of peptic ulcer is the length of time required to effect a cure. Many patients expect results in a few weeks and it is difficult to make them realize that it actually requires from eighteen months to two years to cure the condition. During this time slight indiscretion in diet will cause some of the symptoms to reappear, and for this reason the patient must understand that strict attention to details is necessary, even after the two year period.

As gastric ulcers are prone to become malignant we must be on our guard during treatment that the patient is not secretly changing his pathological state into a far more serious condition. It is by x-ray examination that early carcinoma of the stomach can be detected. In making a diagnosis it is quite necessary to take lateral views of the stomach.

Shattuck, in the September 15, 1929, issue of the *N. Y. State Journal of Medicine*, well summarizes some of the recent trends in the treatment of peptic ulcer as follows:

1. It is quite generally accepted that, excluding complications and certain types of ulcer, all peptic ulcers should first be given the benefit of suitable medical treatment before resorting to surgery.

2. The principle of frequent feedings long continued is recognized as the most important part of medical treatment.

3. No general agreement exists about the rôle of alkalis in medical treatment. The prolonged use of excessive amounts, as advocated by Sippy, has been largely abandoned. And while some methods of treatment do not include alkalis at all, most of them use small amounts of alkalis in the beginning, at least, to bring the distress symptoms under rapid control.

4. The duration of medical treatment has been extended from a few weeks or months to at least one or two years, possibly longer. It is now recognized that some patients have to follow certain restrictions for the rest of their lives.

5. More attention has been paid in recent years to restricting certain forms of physical activity during the early months of medical treatment.

6. The great majority of those especially interested in ulcer treatment still favor the preliminary rest treatment when it is possible. But the large number of ulcer patients who cannot afford the time and expense for such treatment has brought about a much greater use of the ambulatory type of treatment for these patients.

7. Tobacco and alcohol are now generally prohibited for long periods.

8. Obvious foci of infection are eradicated at the start, but the pendulum has swung away from the ultra radicalism of a few years ago regarding foci.

It requires a great deal of patience on the part of the physician to impress upon the patient the necessity for prolonged treatment. Perhaps it requires more patience on the part of the sufferer to follow such a regimen.—M. W. T.

Miscellany

THE CLAMBAKE

An Heroical ballad inspired by a recent event

By E. E. C.

A bunch of famous scientists
Did come from far away,
From Europe and points East and South,
To Beantown on the Bay.

(Now Beantown is a prideful town,
Where people sit and think;
Its favorite fodder being beans;
But nary drop to drink).

For one long week they lingered there,
In sessions scientific,
With no chance for a real good time.
The heat it was terrific.

Discussions, papers, speeches, talks,
From morning into night—
It certainly was much too much;
They were not treated right.

Now when it was becoming plain
That something must be done
To ease the situation and
Supply a little fun,

An invitation came to them
From a place beside the sea,
Where science flourishes indeed,
But not so seriously;

Where staid professors often sport
Beside the sportive wave,
While in the Lab the starfish waits,
And doomed sea urchins rave.

Here, they were told, to honor them,
A clambake on the sand
Would be prepared—a wonderful feast,
They were given to understand.

With shouts of joy they all accept,
Feeling much elated.
From Harvard to the welkin far
The echoes reverberated.

They don't know what a clambake is,
But it means a holiday,
And getting away from program stuff,
And having a chance to play.

Now rumors of these goings on,
Of this festivity,
Spread o'er the land and through the sand,
And far out in the sea,

It roused especially in the clams
An interest intense,
For this gay party plainly was
To be at their expense.

Habituated to their fate,
They murmured not nor wept.
At cultivating stoic calm
The clam is an adept.

But a certain clam there was who, when
He heard of this jamboree,
Had an idea, and to the rest
These stirring words spake he:

"Some of us are doomed to grace

"This horrid holiday.

"Now I have a plan by which we can

"Make a grandstand play,

"And at the same time get revenge,

"At least in a small degree,

"For the outrages science wreaks

"On the denizens of the sea.

"These famous foreign scientists

"As molluscs know our brood;

"But being scarce in their home towns,

"We are to them strange food.

"Not knowing how we should be et,

"How needful 'tis to chew us,

"Some of them may swallow us whole;

"And that's when they will rue us.

"My proposition then, is this:

"Let old, tough, volunteers

"Die for the Cause—put themselves in the way

"When the clamdigger appears.

"It is very good form, as you know, to die

"For any popular cause.

"And these martyrs will get, where the brine is wet,

"Posthumously, applause."

And now behold the scientists,
The much distinguished band,
Some with whiskers, some without,
Foregathering on the sand.

Along with appetite and hope

Anticipation ran;

And all their tongues were hanging out.

They shouted as one man:

"We're here! We're here! Bring on the cheer!

"We're dry, and hungry, too."

The Committee replied, pointing with pride:

"Now see what is waiting for you!"

They look around the festive ground,
And this is what they see:
Heaps on heaps of roasted clams,
Grinning maliciously,

With shells agape; and on the side,
Corn on the cob in stacks.

(Green corn is an ally of the clam
In his vicious attacks.)

The feast is spread, and all is set.

Thereafter what befell,

Must now be guessed. And so the rest

I will not try to tell.

Some Professional Statistics

The United States has 149,521 physicians to its 118,127,645 population, according to a survey of medical education just completed by the Bureau of Education, or 126.59 per 100,000 population, representing a greater percentage than that of any other country.

The bureau explains, however, that this is a smaller number to every 100 square miles than in eighteen other countries, but a larger number than in twenty-two other countries.

The District of Columbia, comprising the city of Washington, leads the States in the number of physicians in proportion to 10,000 of population, as well as the number for each 100 square miles.

"Today," says the bureau, "there are in these United States seventy-four medical schools which are recognized by the American Medical Association, a reduction of six schools in the past two years. A prospective addition to this list is the new school of medicine of Duke University, to be opened in 1930.

"Reports from the American Medical Association show that the enrolment of medical students has been increased in the past two years from 18,840 in 1926 to 20,545 in 1928, an increase of 1,705 students.

"Various reports during the past several years have made it appear that many qualified students were finding it impossible to obtain enrolment in medical schools. However, an investigation made in the Fall of 1926 showed that the 8,500 individual applicants made altogether 20,093 applications, or each applicant on the average had applied to two and one-half medical schools.

"Of the applications received 6,420 were accepted, but when the session began only 5,020 students were actually enrolled, indicating that 1,400 students had applied and had been accepted by two or more medical schools. Thus at the beginning of the college year 1926-27 there were 1,400 vacancies still existing, or one-fourth of the entire first-year capacity. Fortunately the medical schools had waiting lists, so that 989 of these vacancies were filled, as later reports showed that 6,009 students had been admitted.

"The report of the investigation stated also that of the 3,480 not accepted 2,622 were rejected because of unsatisfactory qualifications.

"The number of students graduating from medical schools during the past two years has increased from 3,962 to 4,262, an increase of 300 in the two years.

"For the students who graduated in 1928 a special tabulation was prepared which gave the average age at graduation from the four-year medical course as 26.8 years, or, counting the fifth year of hospital internship, the average age was 27.8.

"Greatly enlarged plants at Columbia University and the University of Colorado medical schools have been completed within the past two years, as have also new buildings at Howard University and the State universities of Iowa, Kansas and Tennessee, and at Johns Hopkins. Thus the capacity of medical schools is continually being increased, which is making it possible to enroll increasing numbers of medical students."

Plans for Saratoga

Mr. Baruch's outline of the plans of the State commission for the development of the State-owned baths at Saratoga suggests the thoroughness with which his organization is preparing to develop the opportunities of making this into the most valuable hydrotherapeutic centre in the United States. With a wise recognition of the benefits to be derived from studying the experience of other similar establishments, a group of medical men has been making a thorough survey of German and French spas and gathering material about the methods of the Japanese, who are great users of mineral springs. Their recommendations are not yet published in detail. But the very fact that the subject is being approached from every possible angle indicates that the final plans

will be such as to make the best possible use of the natural advantages.

One of the most interesting of Mr. Baruch's suggestions is that a research laboratory be established at Saratoga to continue study of hydrotherapeutic technique throughout the world and to advise in adapting and perfecting the practice at other spas. Such an organization might be of benefit to other mineral bathing establishments in the United States. So little thorough study has yet been made of American waters, and so few of the known medicinal springs are properly used, that there is much to be done in this field. Although it might seem that the development of other spas would be harmful to Saratoga, it is clear that anything which encourages Americans to use therapeutic waters will, in the long run, enhance the popularity of Saratoga, which is the oldest best known and most varied of such establishments in America.

Governor Roosevelt last June spoke of the plans to erect large bathing pavilions and rooming accommodations. It would seem that, until the final recommendations of the medical men are accepted and acted upon, extensive construction would be premature. The recently finished new Lincoln baths will make it possible for more persons to use the available springs. Fortunately, the facilities are such that the delay in making the final improvements will not be a serious inconvenience. It is better that the commission take its time and make the most comprehensive recommendations. As Mr. Baruch has pointed out, the development of the baths depends on the cooperation of experts in the medical profession. With this assured, the public will wait patiently, confident that when their work is done, Saratoga will be as highly regarded from the scientific point of view as it has long been popular for other reasons.—*New York Times*.

The Diseases of Illustrious Persons

Dr. Caplescu Poenaru, lecturer in the University of Bucharest, recently gave an address at the Bucharest Ateneul Roman on the diseases of illustrious persons. He said that syphilis and alcoholism predominate among the acquired and inherited diseases of notable persons. He started the list of illustrious persons with Jesus, the greatest benefactor of humanity. Jesus probably suffered from tuberculosis, judging from the statement of physicians that "water flowed from between his ribs, when he was stabbed with a lance." Probably he had a serous pleuritis.

In ancient times the knowledge of hygiene, which was based entirely on religious beliefs, left much to be desired. It is stated in several books on parasitology that celebrated men of different ages were lousy throughout life and that these parasites were important factors in causing their untimely death. The list includes: Alcman, a Greek poet; Plato; King Herod; Menenius Agrippa; Pherecydes, the great tragedian of the Greeks; Philip II of Spain; Cardinal Dupra, and Foucault. Stigmas of degeneration have been frequent among the Hapsburgs; hence the peculiar and curious characters of some members of this family. Characteristic peculiarity has been particularly emphasized in the following members of the Hapsburg family: Leopold XVI, Maria Louisa, Maria Theresa, Renaude, Marie Antoinette, Rudolf II of Germany, John VI of Portugal, Charles II of Spain and Maria Caroline, Cosimo II, and Hercules of Italy. The most important stigma in all of them was marked projection of the jaw. Besides this a striking increase in the vertical diameter of the face has been frequent in the Hapsburg family.

According to Corvisart, Napoleon's physician, Napoleon suffered from constant bradycardia. His heart seldom exceeded 50 to 60 beats a minute. It is alleged, but not by Corvisart, that Napoleon was an epileptic. He did not display the regular form of attacks, but he had spells of unconsciousness which lasted only for a short time and came on infrequently. Napoleon died on the island of St. Helena from cancer of the stomach. His father and several other members of the family died from the same disease. Napoleon's letters reveal that he had an unusual sense of sentiment, seldom seen in great military leaders.

Cabanès' works contain criticism of several rulers. According to him, Juana la Loca, the daughter of Ferdinand of Aragon and Isabella of Castile, who married Philip the Handsome, displayed exaggerated and pathologic love. Her unbounded jealousy led to many scandalous scenes. She herself cut the hair of Philip's favorite court dame and insulted her corporeally. Her capricious nature, taciturn behavior and maniacal attitude compelled her father and husband to declare her insane, and thus deprived her of the right to inherit the throne.

The notorious rule of Charles V, son of Philip the Handsome and Juana la Loca, is well known. His son, Philip II of Spain, lived a wild life before his marriage; he was a chronic "skirt hunter" as he was called at that time; a "Don Juan" as he would be called now. Clad in disguising clothes he frequented public places, dens, haunts and brothels. In his religious craze and fanaticism he went so far as to order thanksgiving processions when his son died, thanking God for having called his son to himself. When his wife died he wrote to the Prince of Alba as follows: "Prior to her death she gave birth to a girl of four to five months' gestation. The child was christened and shortly afterward went up to heaven with her mother."

Philip II had his son, Don Carlos, cast into a prison, and stated that by reason of his character and vengeful nature he lacked the virtues that would make him fit to rule a country. Some contemporaries alleged that his act could be traced to jealousy. When Don Carlos fell ill in the prison and begged his father to come to see him, he denied his request and even forbade the queen to visit her son. According to some historians the king was responsible for the death of Don Carlos. He ordered the execution of Baron Montigny because he dared to assert publicly that "it is an improper deed to soil clerical actions with blood."

Peter the Great, who acquired the throne of Russia in a vicious way, was an epileptic and had a hot temper. He was so afraid of black beetles that he boxed the ears of one of his officers who showed him a black beetle out of his prized collection of insects. The officer, of course, did not know of the emperor's insectophobia. Peter the Great had a character which ran to extremes. Lashing, kicking and beating were the punishments of his time. He beat his ministers, and thrashed his favorite minister, Menchikoff, until he bled because he danced at a court ball with his sword at his side. Besides having liaisons with court dames, he selected sweethearts from among laundresses, servant girls and the like. He acquired syphilis in Holland and then infected his wife. He had one of his sweethearts, Hamilton Pavlona Maria, beheaded because she had three miscarriages, probably on account of syphilis contracted from him. Eye witnesses stated that after decapitation he picked up her head and

gave an anatomic lecture on it to those present, then kissed the pale lips and threw it away, after which he made the sign of the cross and left. He studied anatomy extensively and maintained a well equipped anatomic museum for his own use. He also studied medicine and dentistry. He granted pardons to criminals who permitted him to extract their teeth. He had his first wife shaved and afterward imprisoned her. He had his son Alexis killed. His second wife, Czarina Catherine I, spoke several languages, but could neither read nor write except to sign her name.

Peter III, Grand Duke of Holstein, was an imbecile. Although he was the ruler of a state, he played with toy soldiers especially made for him of wood and lead. His favorite pastime was training dogs. His wife, Catherine II, suffered much from his vulgarity, coarseness and brutality. He was drunk almost constantly.

After having dethroned her husband, Catherine II became very loose morally. She became pleasure-loving and sensual, and even in her advanced years had a great number of lovers. Her son, Paul Petrovici, was a degenerate and an epileptic. Catherine once spoke about her son to a friend as follows: "What is your opinion of this idiot? What will become of Russia, if he reaches the throne?" After Catherine's death from a cerebral hemorrhage, Prince Paul occupied the throne. He did not impress any one as being a normal man.

Molière suffered from advanced tuberculosis, and in addition to this he worked too much. His tragic death resulted from a pulmonary hemorrhage which began during the fourth performance of his famous comedy the *Malade Imaginaire*. He died within a few hours. The fate of Charles Baudelaire was similar. Alfred de Vigny and Balzac also died of pulmonary tuberculosis. Alfred Musset was a slave to drink, and although his works were highly appreciated during his life, his funeral was attended by not more than thirty mourners. Rachel, the great French tragedian, whose statue stands in the entrance hall of the Paris Comédie Française, died at the age of 37 from tuberculosis of the lungs.

From a pathologic point of view the life of Edgar Allen Poe is interesting. His works had a great influence on Baudelaire. Schumann, the celebrated composer, died in an insane asylum. Beethoven suffered from chronic middle ear catarrh which was conducive to his untimely deafness; he died from pneumonia. Chopin, the Polish composer, died of tuberculosis of the lungs.

Pasteur suffered a cerebral hemorrhage in his forty-fourth year, in consequence of which one side was paralyzed. Fortunately his brain did not suffer in any way and his ability to work was not impaired. The first inoculation against rabies was administered by him afterward, and following that he enriched mankind with a whole series of valuable discoveries.

A gloomy fate also befell Eminescu, the greatest of Roumanian poets. He was born in 1850 in Botosani, Roumania, and lived as a tramp from early childhood. When 16 years of age he joined an itinerant theatrical company and wandered through many villages and towns. At the age of 18 he was employed at an inn as a cart-driver and in his leisure time he read the classics. Later he studied philosophy in Vienna and Berlin but grew impatient and returned home, where he worked on his poetry for a few years. In 1882 he became insane and was confined in an asylum near Vienna, but his condition had improved so much by 1884 that he again started his poetical work and wrote his best poems, which have been translated into several languages. In 1888 he again became insane and was confined in an asylum in Bucharest, where another patient killed him by crushing his skull with a large stone.—J. A. M. A., Sept. 28, 1929.

Medical Films

FORWARD WITH MEDICAL FILMS

How Improved Film, More Flexible Equipment and the Talkies Are Advancing Medicine and Surgery

With the recent rapid increases in technical scope of amateur movie equipment, says Louis M. Bailey, the usefulness of this medium of visual instruction has greatly enlarged for the medical profession, with resultant advances in its effectiveness, according to reports received by *Movie Makers* from many doctors and surgeons among the thousands now employing the camera in their work. Panchromatic film, for instance, it is stated, has made possible the registration of true chromatic values, a factor of vital import in the study and diagnosis of filmed surgical cases. Here the distinction between tissue, blood clots and diseased matter in incisions must be clearly indicated if the record is to be of value. This was not possible with ordinary orthochromatic film on which an incision registered a uniformly dark area. However, since the introduction of "pan" a true rendition of actual conditions is achieved and the elements revealed by the incision are made clearly distinguishable.

Concerning this use of film, Dr. Paul Appleton, assistant visiting obstetrician of the Providence, R. I., Lying-In Hospital and member of the Amateur Cinema League, says, "One of the greatest difficulties in the photography of surgical operations has been that blood stains show in monochrome as ugly black smudges. This, however, is now overcome by panchromatic film and the use of various degrees of ray filters which give colors relatively true representation. Too, the average motion picture lens is so fast, $f:3.5$ up to $f:1.5$, that the addition of the filter does not require such an increase of exposure as to interfere with indoor hospital and laboratory photography."

Another epochal step in the progress of medical photography, made possible by development of amateur cine processes, is reported by the Post-Graduate Hospital, New York City, where a series of color films on plastic surgery is being made under direction of specialists in this field. Here, again, a true rendition of color values is vital and this new development is to be utilized in reproducing these intricate and delicate operating room activities with lifelike reality for surgical students.

Nor is surgery the only branch of medicine to benefit by the camera's growing flexibility. Dr. Smith Ely Jelliffe, eminent neurologist of New York, says of his work, "No phase of medicine has found the cinema of so much value as the field of nervous and mental disease. The student of the nervous system is almost exclusively guided by his studies of sensation and motion. Behavior is primarily founded on sensation and sensation is essentially represented by some form of motion. This simple principle is the basis of all behavior."

"There is no movement that is meaningless. Every movement, even one that outwardly seems as slight and inconsequential as the manner in which a man twiddles his fingers, raises his eyebrows or taps his foot, tells a story that can clearly be read, provided one has the appropriate training. Motions demonstrate what a man really is—his actual status—and, consequently, nothing is so valuable to the neuropsychiatrist as adequate records of such motion. Cinematography is able to provide and establish these records and, therefore, modern motion picture equipment is proving to be of infinite aid in the interpretation of, and hence in the treatment of, mental and nervous disorders."

And, of course, in this field the variable speed cameras are invaluable, having been developed to such a high degree that, in one, seven different speeds are available to the student.

Further indication of the interest of the medical profession, fundamentally a conservative and intensely practical body, in the newest phases of motion pictures is contained in a letter from Dr. Joseph B. De Lee, Chicago Lying-In Hospital, who writes, "One of the great developments in educational motion picture films is the talking picture. We are going to wire our new hospital for the eventual talkie." This progressive viewpoint is invaluable to modern medicine and undoubtedly instruction of the future will widely utilize films of actual surgery, later synchronized with the desired comment by eminent authorities, to replace the old and necessarily ineffectual operating-room surgery lesson.

The value of the closeup here can truly be appreciated in contradistinction to the occasional glimpse of the subject now permitted the distant student, required to keep away from the operating table in deference to necessary antiseptic measures.

Nor should the highly developed equipment now available for microcinematography be overlooked in a consideration of the intensive uses being made of the motion picture in medicine. The recording on film of the activity of micro-organisms provides study material of the greatest value and the possibilities of this field may truly be said to have so far merely been glimpsed.

Concerning camera work in the operating room, Dr. Appleton also presents data which will be helpful to other medical cine-

matographers. He says, "Operating room pictures require the extra fast lens equipment. Most operating rooms are well lighted and the walls are usually white. Dressings and drapery of patients', surgeons' and nurses' gowns are also usually white which provides additional helpful light reflection. During many operations an artificial spot light is also used by the surgeons on the field of operation. This light, while constructed especially for surgery and not for photography, is, however, of considerable actinic value and enhances the brilliance of the operative field to be pictured. The so-called 'Scylaitic Light,' which is almost universally used today in operating rooms, will be found to have very good actinic value. Other light supplied by the photographer is not only unnecessary but undesirable and, in most cases, if the daylight is brilliant, regardless of the season, the lens should be stopped down to $f:2$ or $f:2.5$. If the day is extremely bright, especially in summer, $f:3$ is usually enough lens opening. A dull day in winter or late afternoon of any season, with waning daylight, will require $f:1.8$ or $f:1.5$ —the full opening. If possible, the cameraman should stand on a fairly high stool quite close to the table and point his camera down upon the field or subject. In surgical work, medium closeups are much more effective than medium or long shots, the latter being of no value in this class of photography. An accurate focus is very necessary because one is using a high speed lens at, or nearly at, full aperture and the depth of focus is therefore very limited. It is here that a focusing microscope is a very helpful adjunct in getting accurate results and in saving much film."

"Surgical motion pictures cannot be staged to any degree. The photographer must be ready at a moment's notice and extreme care is essential as to exposure and focus, not only because one does not wish to waste film but because it is equally easy to waste an opportunity. A really good picture of an interesting or rare operation under good surgical teamwork is not the easiest picture to get. It will pay the photographer to practice a little in the operating room in which he is expecting to work, if it is possible. A few test exposures under various conditions will give the observant worker information enough to assure him of very creditable results thereafter, whenever the opportunity presents itself. It is most reassuring when the important time comes to have the satisfaction of knowing what one may expect in results."

In conclusion Dr. Appleton states, "Amateur motion picture making for the doctor is simpler than it sounds. Extremely helpful in teaching, it is a fascinating activity. No elaborate scenarios, makeup or costuming and no expensive sets are required. The bulk of the expense is in the first cost of the apparatus, which is not great, and needs no further outlay save for the occasional addition of needed accessories and for film supply."

"And picture making is no mean hobby. It leads to all sorts of interesting by-ways and experiments which relieve one's mind from the trials of his usual vocation. The work may be taken up at any time to be left again until another chance presents itself. One needs no partner in this game but any number may play. The knowledge acquired in the making of a film is helpful and interesting and the maker is amply repaid by the pleasure derived and the general advancement which he gains."

"The accurate medical teaching to colleagues as well as to lay audiences through this medium is excellent educational propaganda and reacts favorably to the reputation of the maker of the pictures. Boards of trustees that are alive to modern trends are encouraging motion picture production in the hospitals over which they benignly reign, realizing, as they do, that good clinical movies reflect credit upon the institution and properly advertise its character and influence."

Thus, the medical profession, ever alert to new scientific developments, is finding in the amateur motion picture an ally which is constantly growing more effective. It is a tribute to the amateur motion picture industry that a profession with such high ideals of perfection has found its products so helpful and so worthy.

Nervous Complications of Infectious Diseases of Children and Vaccination

Boenheim (*Klinische Wochenschrift*, Berlin, July 13, 1927) reports four cases of measles complicated by cerebral symptoms, one case of scarlet fever with slight ataxia and motor disturbance of the legs, two cases of whooping cough with encephalitic symptoms, one case of chickenpox with encephalitis. In the author's ninth case, the patient was vaccinated five days before meningitic symptoms appeared. Autopsy revealed tuberculous meningitis and areas of softening in the mid-brain.—*Journal A. M. A.*

Etiology of Leprosy

Edward V. Vedder (*Philippine Journal of Science*) supports the theory of transmission of leprosy by a biting arthropod. The high incidence of leprosy in certain definitely localized areas appears to indicate that some agency other than actual contact with the infected is necessary for the spread of the disease.

Public Health

STATISTICS OF THE TEN MOST COMMON SKIN DISEASES

Based on an Analysis of 973,090 Published Cases*

Students have always been interested in the numerical study of their problems. Compilations have been popular for many generations. Observers have published their individual accounts of the prevalence of skin diseases in their experience, and for many years reports of members of the American Dermatological Association have been compiled by Dr. S. Pollitzer. The staff at the New York Skin and Cancer Hospital has made résumés of the diagnoses recorded at that institution. It has seemed worth while to review the published reports, and to tabulate the observations limited to the ten most common conditions encountered.

TABLE 1.—Compilation of Published Statistics on Order of Incidence of Most Common Diseases of the Skin

Disease	Crocker	Bulkeley	Pollitzer	Pollitzer	S. & C.	S. & C.	S. & C.
Order of	10,000	10,000	679,376	58,387	44,346	62,898	108,283
Total of	Public	Clinic	A. D. A.	A. D. A.	Clinic	Clinic	Clinic
973,090	Patients	Patients	1878-1911	1913-1917	1918, 1919,	1920-1922	1923-1927
Patients*			Inclusive	1916	Inclusive	Inclusive	Inclusive
Eczema	1	1	1	1	1	1	1
Acne	5	2	2	2	2	2	2
Scabies	3	5	3	5	6	6	3
Psoriasis	4	3	10	4	5	7	7
Seborrhea	2	9	5	6	4	4	4
Impetigo	2	10	4	3	9	3†	5
Urticaria	6	6	9	8	3	5	6
Dermatitis							
venenata	4	11	10	7	8	5	5
Tinea	8	8	9	8	9	9	9
Alopecia	..	6	11	..	..	..	..
Pediculosis	..	7	12	..	..	..	..
Pruritus	8	7	12	14	11	11	11
Verruca	..	11	13	13	10	10	10
Ecthyma	..	..	7	..	..	..	..

* There may be some reduplication as A. D. A. members at the Skin and Cancer Hospital undoubtedly reported their hospital patients for 1916 to Dr. Pollitzer.

† Based on the years 1910, 1920 and 1922.

I recognize that the method of compilation of the original figures is open to many objections. But it seems to me that on the whole the index of error is constant. Probably just as many cases have been omitted from any group as have been added in error. It seems also that the fact that there is an agreement as to the ranking fourteen diagnoses made by American observers over such a long period of time is significant. Particular lessons may be gleaned from a study of the charts, and individual conclusions may be drawn, but these are beside the purpose of the present presentation.

* Read at a meeting of the Clinical Society of the New York Skin and Cancer Hospital, Dec. 21, 1928.

It would be interesting if further statistical studies arranged as this one would appear from other sources, so that comparisons might be made from time to time. The original statistical reports on which my tables are based are readily available, and I have not extracted the actual numbers of cases reported under each diagnoses, but have given the percentages.

TABLE 2.—Compilation of Published Statistics of Percentage of Incidence of Most Common Diseases of the Skin

Disease	Crocker	Bulkeley	Pollitzer	Pollitzer	S. & C.	S. & C.	S. & C.
Order of	10,000	10,000	679,376	58,387	44,346	62,898	108,283
Total of	Public	Clinic	A. D. A.	A. D. A.	Clinic	Clinic	Clinic
973,090	Patients	Patients	1878-1911	1913-1917	1918, 1919,	1920-1922	1923-1927
Patients*			Inclusive	1916	Inclusive	Inclusive	Inclusive
Eczema	26.3	26.11	22.5	16.0	20	24.0	21.0
Acne	4.44	10.44	7.8	7.1	13	10.4	10.0
Scabies	7.96	2.13	4.9	3.2	4	5.0	5.0
Psoriasis	7.18	3.18	2.8	3.6	4	4.1	4.0
Seborrhea	..	1.12	3.9	3.1	4	5.1	5.0
Impetigo	9.61	0.99	3.8	4.3	2	5.2*	3.0
Urticaria	4.40	1.80	2.9	2.9	5	5.1	5.0
Dermatitis							
venenata	..	2.56	1.6	2.5	3	3.0	5.0
Tinea	3.18	0.96	3.2	2.8	3	2.0	2.0
Alopecia	..	..	3.0	2.1	..	..	..
Pediculosis	..	..	3.4	1.9	..	..	..
Pruritus	0.90	1.24	1.6	1.2	1	0.8	0.8
Verruca	..	1.14	1.0	1.6	1	1.5	1.0
Ecthyma	..	..	..	3.1	..	..	..

* Based on years 1919, 1920 and 1922.

Eczema and acne together account for practically 30 per cent of the total reported diagnoses. Except for the figures reported by Crocker from public practice in England, these two diseases rank first and second for all reports.

	Crocker†	Bulkeley*	Pollitzer*	Pollitzer*	S. & C*	S. & C*	S. & C*
	10,000	10,000	679,376	58,387	44,346	62,898	108,283
Eczema	26.3	26.11	18.6	16.0	20.0	24.0	21.0
Acne	4.44	10.44	8.4	7.1	13.0	10.4	10.0

† Crocker, H. Radcliffe: Diseases of the Skin, Philadelphia, P. Blakiston's Son & Company, 1903, p. 1401.

* Bulkeley, L. Duncan: Diseases of the Skin, New York, Paul B. Hoeber, 1898, p. 41.

* Pollitzer, S.: J. Cutan. Dis. 32:312 (April) 1914.

* Pollitzer, S.: J. Cutan. Dis. 36:294 (May) 1918.

* New York Skin and Cancer Hospital Annual Reports. The following conditions have been considered together in order to avoid certain irregularities which would otherwise have crept into the tables: Acne includes acne indurata, rosacea and vulgaris. Tinea includes circinata, cruris, versicolor, dysidrosis and pompholyx. Verruca includes plantaris, planum and vulgaris. During the years 1918 to 1922 inclusive there were 81,205 recorded diagnoses made with a tabulation for all years except 1921, which decided me to divide into periods rather than to make one continuous compilation. Syphilis, which ranked second with Pollitzer in the report of 1914 (9.4 per cent), has purposely been omitted from this compilation since the problem of the diagnosis of syphilis has changed since 1910.

It is interesting to learn that the ranking six diagnoses from each reported set of figures average 50 per cent of all diagnoses, although no report includes the same six as another report and in the same order of prevalence. The ranking six diagnoses are:

	Percentage
Crocker: Eczema, impetigo, scabies, psoriasis, acne, urticaria	57
Bulkeley: Eczema, acne, psoriasis, dermatitis venenata, scabies, urticaria	44
Pollitzer: Eczema, acne, scabies, impetigo, pediculosis	46
Pollitzer: Eczema, acne, impetigo, psoriasis, scabies, seborrhea	46
S & C: Eczema, acne, urticaria, seborrhea, psoriasis, scabies	50
S & C: Eczema, acne, impetigo, seborrhea, urticaria, scabies	54
S & C: Eczema, acne, scabies, seborrhea, dermatitis venenata, urticaria	51

A review of the tables shows that fourteen diagnoses were all that were required to include the most common skin diseases reported. If one adds each column separately one finds that Crocker with only 8 diagnoses gives 60 per cent of his total of 10,000 public patients; Bulkeley with 11 diagnoses accounted for 47 per cent of his 10,000 clinic patients; Pollitzer in his early résumé needed only 13 diagnoses for 55 per cent of 679,387 reported cases; in his report of 1916, Pollitzer accounted for 60 per cent of 58,387 cases with 14 diagnoses; at the New York Skin and Cancer Hospital 11 diagnoses averaged over 60 per cent for the years during which 215,327 patients were seen.

Giving each report a mean of 11 diagnoses, one finds that these ranking cases account for 57 per cent of all diagnoses for a total of little less than a million patients extending over a half a century of recent and modern dermatology. The list of most common diseases has varied little despite recent advances in aids to clinical diagnosis. True enough, diseases of rare occurrence are diagnosed more often, but the fundamental problems of the previous generation of practitioners of dermatology are still extant. Despite new knowledge, urticaria remains urticaria; and unfortunately eczema is still the scrap bag of the profession with few indications that some of its territory is being eroded by recent studies.

And the greatest lesson of all: a knowledge of less than a dozen conditions agreed as being of the class of diseases of the skin would make any practitioner no less than 60 per cent proficient in the field of dermatology.—HERMAN GOODMAN, M.D., in *Archives of Dermatology and Syphilology*, August, 1929.

Longevity and Cancer

In a recent number of *Science* Professor C. H. Forsythe, of Dartmouth College, crosses swords with the optimists on the subject of the increase in the length of life. He says that the purpose of his paper is to "take issue with those who are so elated with results obtained in their own immediate fields leading to significant reductions, not only in certain death rates, but also in the prevalence of certain diseases that they feel justified in predicting marvelous increases in the average length of life in the not great future." "Most of these optimistic authorities have failed to appreciate that practically all these results have been obtained in children's diseases, and very little or no attention has been given to the ages beyond the prime of life."

The writer claims that conditions in this country at advanced ages have been on the down-grade ever since the first mortality records were established, and we have now reached such a pass that all the great gains at the early ages are already more than offset by the losses at advanced years. In brief, he considers that he can show that the average length of life in this country is now actually decreasing. "It is most momentous and almost inconceivable that a civilized and even a highly prosperous nation should have a decreasing average length of life." This sad news has been echoed from some of the insurance companies, showing that in the older age groups no prolongation of life was observable. The great decline at advanced ages is concentrated about age 70, although it extends as far back as the age 40, according to Professor Forsythe.

"The whole picture points consistently and inevitably to a future of a declining length of life until the American adult wakes up to the fact that the odds are at present heavily against his living as long as his father or grandfather." Some will say that this is all the natural consequence of the great migration to the cities; others, that life has become too fast and strenuous

and that we do not yet know how to adjust ourselves to such a life. To physicians the great problem will loom as one of relieving strain upon the heart or conquering cancer, but little will be accomplished until the American adult himself is duly informed and made to realize that he is in the midst of a losing fight and that the situation will continue until he applies himself energetically to be superior to his environment. Medical authorities can be depended upon to care for the children and their diseases, but they have little or no chance to interfere with the lives of adults. There is surely no worse influence than that yielded by the well meaning individuals who go around airing their ill-founded beliefs that all is going well and before long everybody is going to live 75 or 100 years.

All this in July 26, 1929, but in the September 13th number of the same magazine, Mr. J. D. Ryan, of San Francisco, in rebuttal, states that "mortality statistics are not a satisfactory basis for such generalizations." "The great reduction in infant mortality and in deaths from communicable disease in recent years has postponed death to the later years, and the lives thus prolonged are usually sustained at diminished vitality." It is reasonable to expect that the average general health of the community has been diminished, and the average death rate during subsequent years is increased by these extended lives. If a substantial number of these previously short lives has extended to 40 and 50, the average age of death of all persons passing the age of 40 is also reduced, and the ratio of the number of persons reaching the age of 50 to the total population will also be reduced. The increasing mortality due to certain organic diseases is frequently referred to in current discussions as indicating a greater susceptibility induced by changes in our manner of living or by the devitalizing influence of organic stresses incident to more strenuous activities. "There is absolutely no foundation in fact or experience for such beliefs." More people escape death by infections than formerly, but as all of us ultimately die, it is inevitable that there should be a corresponding increase in the number of deaths from other causes. We have reason to expect a continued reduction in mortality from tuberculosis, typhoid, and other prevalent diseases in the future which should appreciably prolong the average span of life. "As many of these lives will be terminated later by cancer and diseases of the heart, it would be absurd to draw alarming inferences from subsequent statistical reports showing increased deaths from these causes."

Preliminary statistics of the Census Bureau for 1927 show that cancer is now, after heart disease, the second cause of death. The crude death rate from cancer has steadily increased, despite all the educational efforts to interest the public in early diagnosis and the real advance which has taken place in the treatment of the disease. Opinions still differ as to whether these crude rates can be accepted as valid proof of an actual increase in the disease. Most expert statisticians are divided on this subject. Some of them have changed their minds several times in the past few years. The statistics of the Metropolitan Life Insurance Company show that cancer is increasing only in the older age groups. Professor Wells, of the University of Chicago, has pointed out that all cancer statistics are vitiated by large errors due to the inability to diagnose many internal cancers during life, and that autopsies are so infrequent in the United States that many cancer deaths escape record. Every pathologist will agree with him. Others point out that a high cancer death rate is only an evidence of good doctors in the community. In other words, more cancers are diagnosed in a city with good physicians than in one without.

Another puzzle has been the high death rates in cities. Why should San Diego have a death rate of 214 per hundred thousand, and Gary, Indiana, have a death rate of 43 per hundred thousand? These are the crude figures and on the surface would indicate that Gary is a much more desirable place of residence than San Diego—a conclusion which those who have visited both cities will promptly deny. The truth is probably that Gary is largely a mill population of young laboring men, their wives and children, and San Diego, owing to its beautiful climate, is populated by an older, well-to-do class who have cancer, not because they are well-to-do or because they live in San Diego, but because the cancer death rate is higher in those who are old than in those who are young.

The only answer to all this contradictory material is that it is perfectly evident that cancer is a very frequent disease, that it is always fatal unless treated, and that it behooves every individual to be regularly examined by a competent physician after the age of forty, and that when he or she has a cancer, not to argue the matter but to take as promptly as possible such form of treatment as is recommended by the most competent physician he or she can find.

A Broader Outlook on the Tumour and Cancer Problem

Until quite recently the attention of investigators of the cancer and tumour problem has centred in the "autonomy"

of the cancer or tumour cell. This strange "autonomy" has been considered the basis for the development and growth of tumours. Other tissue components, notably blood circulation and nerves, were either almost entirely neglected, or at least subordinated to a position of minor or secondary importance as regards origin, growth, and extensions of the tumour. Some years ago Professor Ricker, of Magdeburg, formulated a theory of cancer (and other tumour growth) in which he put the blood-circulation prominently in the centre of events, and in which he advanced the opinion that all tumours arise directly on the basis of a long continued local hyperæmia (neuro-vascular stimulation), and that tumour growth is the result of disturbed (pathological) nutritive relations between the blood supply of the tissue and its cells (the so-called peristatic state). In his opinion, local hyperæmia first initiates, through increased nutrition, cell hyperplasia and paratypical hyperplasia (precancerous or carcinoid stages). The latter becomes "atypical," more primitive, through a metabolic decline or simplification which is morphologically revealed by the structural changes characteristic of these cells. (This factor has lately received some support by Warburg's investigations of the chemistry of cancer cells). It constitutes, according to Ricker, the first step in the tumour process. The second step arises from the altered, more primitive metabolism of these cells, which, through certain secretory products, stimulates adjoining blood vessels and stroma to new formation. This effect becomes notable in advance of the tumour, even at some distance from the tumour growth. It permits the extension of these cells to new territory, and also accounts for the positive transplantation results. The regression and waste of normal parenchyma in the tumour field is not, Professor Ricker holds, evidence of an active to our invasion or of particular destructive properties of tumour cells, but rather the necessary result of the altered, disturbed relations of the "pathic" new circulatory arrangement and blood supply to the normal tissues, while this blood supply is co-ordinated and fitted to the tumour parenchyma. It would go beyond the intentions of this statement to give here the details of Professor Ricker's interesting reasonings, but his theory has recently received a certain amount of suggestive experimental and morphological support, especially from the side of tar cancers. A number of investigators have discovered that the local application of tar is followed by coextensive hyperæmia, and Ichikawa and Baum, moreover, found that animals which respond to tarring with tumour-formation, (rabbit, mouse), react primarily with local hyperæmia, while animals which do not, or rarely, respond with tumour-growth, (guinea pig, rat), do not show hyperæmia. Evidently vascular and epithelial reaction run parallel. Of very great interest in this connection are observations made by Leiv Kreyberg.² His conclusions are here quoted: "Tarring of the skin of white mice produces a marked local hyperæmia, with increased transudation. The hyperæmic condition lasts as long as the tarring is continued. The hyperæmic tissues are furnished with supernormal amounts of nourishing substances and oxygen. During this period the same tissues, especially the epithelium, become hypertrophic. The hypertrophic epithelium later forms warts and papillomas. The formation of these "benign" tumours is intimately connected with the occurrence of excessively dilated capillaries. At this point, small, multiple, capillary thrombi are found, especially in and around the developing tumours. In a tissue which had been previously furnished with an increased amount of nourishing substances, and which had shown an increased rate of growth, the blood-vessels become more or less obstructed, and accordingly the supply of food and especially of oxygen correspondingly decreased. In the following period the manifest malignant tumours develop." Further investigations showed that this hyperæmia persists a variable time after tarring has ceased and is apparently followed by anatomical and functional changes in the capillary vessels.

One other point is raised in this connection and touched upon by Leiv Kreyberg—the possible relationships of nervous influences in the development of tumours, which have been reported by Cramer and others. These, he thinks, may act through their vaso-motor effects. Thus, Cramer³ found "that the presence of the peripheral nervous mechanism is an essential factor in the process of chronic irritation which leads to the development of cancer," and also that the loss of nervous control in an area of skin (by previous dislocation and reattachment) does not predispose to cancer. Clinical observations of a similar kind were made years ago by Sir Lenthal Cheate. While it has generally been taken for granted that tumours are nerveless, Ricker has pointed out that the failure of histological methods to demonstrate nerves in tumours is very likely the fault of our technical deficiencies, rather than an indication of absence of nerves:

just as is the case in any young tissue rich in cells and also in granulation tissue, in which present histological methods generally fail to demonstrate nerves. Functional tests have demonstrated in the latter, at least, the presence of vaso-motor nerves. Since then evidence has been offered by several investigators that tumours, experimental and spontaneous, in animals and man, actually possess a nerve supply and further refinement of histological technical methods may be expected to confirm these findings. This is, at least, the writer's personal experience as regards nerves in tumours.

It remains to be seen how far these observations may be generalized and applied to human cancer, but these findings point to a somewhat broader and more exact understanding of the tumour and cancer problem, than is possible under the older, restricted views of a more or less mystic cell "autonomy" and cell "aggression" to which almost everything else has in the past been subordinated. It may be that we have in the tumour problem as elsewhere, focused our attention too strongly on the autocracy of cells without sufficient regard to those environmental influences, (blood circulation and nerves), through and by which cells are physiologically and pathologically set in motion. If the results here sketched are further substantiated it would be another instructive example to illustrate that in dealing with tissues one may not, even for the sake of study, safely separate one tissue component from the others, but that tissues form an insoluble, causally connected, system which moves as a whole, even in such strange anomaly as tumour growth.—Horst Oertel, *The Canad. M. A. J.*, Mch., 1929.

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Where Do People Die?

Workers in the field of public health and particularly those concerned with the broad aspects of the hospital problem, will be interested in an article by Dr. J. V. DePorte, Director of the Division of Vital Statistics, entitled "Where do People Die—at Home or in Hospitals?", published in the August, 1929, issue of *The Modern Hospital*.

A survey of the more prevalent forms of sickness in certain districts of rural New York which was recently carried out by the State Department of Health, indicated that each year there occur in the country as a whole, more than 125,000,000 cases of illness, with a quarter of a billion as not an impossible estimate. The mortality in the entire country in 1927, based on the number recorded in the registration area, was approximately 1,360,000. This gives an average of from 100 to 200 cases of sickness for each death. The growing recognition of this fact by organized public opinion manifests itself in diverse ways, among which the development and increase of hospital facilities are outstanding. According to the latest figures, in the course of the twenty-year period, 1909-1928, the number of beds in hospitals of various types in this country more than doubled—from 421,065 to 892,934—while in the same interval the population increased by 30 per cent.

The necessary information on the prevalence of sickness in sufficiently large areas not being available, the New York State Department of Health approached the analysis of the hospital situation from the less satisfactory but more practicable angle of recorded mortality.

Comprehensive tables based on the returns for 1926, show that out of the 75,268 deaths in the State, exclusive of New York City, 52,885 occurred in private dwellings and 22,383 in state and private institutions. Of 1,000 institutional deaths, 642 were recorded in general, special and surgical hospitals, 149 in state institutions for insane, 76 in county and city homes and almshouses and 59 in tuberculosis hospitals and sanatoria.

The percentage of deaths recorded in institutions was greatest from puerperal diseases and least from diseases of the circulatory system. In the group of general hospitals, 52 per cent of deaths were of persons over forty-five years of age and 15 per cent over seventy, while in tuberculosis hospitals and sanatoria, three-quarters of all deaths were of persons under forty-five years of age.

An analysis of the mortality in the State, exclusive of New York City, according to the general nativity of the decedent shows that the proportion of foreign-born persons who died in institutions—33.1 per cent—was higher than the corresponding proportion of native-born,—28.5 per cent. In general hospitals the percentages for these two groups of the population were identical, 19.0 per cent. The proportion of foreign-born was higher in institutions for the feeble-minded and the insane, being 6.3 per cent as against 3.8 per cent native-born; in county and city homes, the foreign-born registered 2.8 per cent and native-born 2.0 per

cent; in tuberculosis hospitals and sanatoria foreign-born 2.2 per cent and native-born 1.6 per cent. In maternity hospitals and infant homes, however, it was found that deaths of native-born represented 95.5 per cent of the total. In this connection we may say that the unlike age composition of these two groups of the general population in all probability accounts for most if not all the differences shown above.

The results of this study, it is hoped, will give some measure of the extent to which hospital facilities meet the needs of the people.

Undulant Fever in 1928

The Division of Communicable Diseases of the New York State Department of Health has recently analyzed the supplementary reports on undulant fever cases known to have occurred upstate in 1928. The total was 45 cases, as compared with 22 cases which were brought to the attention of the Division in 1927, and 5 cases in 1926.

The 1928 cases were widely scattered. As in previous years, epidemiological evidence of the milkborne nature of the disease was slight. Two cases occurred in Little Falls in persons who had used milk from the same source as in a case which had occurred about a year before. Similarly in Utica and in Newark there was in each place a patient who had used milk from the same source as cases which had developed about one year previously. In 8 cases the occupation of the patients had apparently brought them into contact with farm animals. Five were farmers, one was a government meat inspector, one a traveling salesman of cattle feed, while another was a veterinarian who felt that he had been infected through an abrasion at the delivering of a calf,—the wound not healing for two months. One patient, an Italian laborer, had consumed goat's milk in addition to raw cow's milk. In 38 cases in which the nature of the milk supply was known, raw milk had been used in all but two. In 33 cases in which the history in regard to abortion of animals on the dairy farms was given, there was history of abortion in 17 and of none in 15, while the history in one case was questionable. In one instance a sow had aborted, but the other abortions apparently all occurred in cattle.

The accumulated data serve to illustrate the widespread distribution of the infection and a low infectivity.

A striking feature is the higher incidence in males, 30 patients being male, and 15 female.

The age distribution was as follows:

Under 10 years.....	0	40-49 years.....	9
10-19 years.....	4	50-59 years.....	7
20-29 years.....	7	60-69 years.....	3
30-39 years.....	14	70-79 years.....	1

Forty-six per cent of the females were over 50, as compared with 13 per cent of the males.

There is a suggestion that the term "undulant" is somewhat of a misnomer in this disease. In only 19 cases was there a history of one or more periods of several days to several months between attacks, while in 16 cases it was stated that the disease had not been "undulant" in character. In seven other cases the history was questionable in this regard, while in three cases no statement was made.

Records are on hand in 42 cases as to the dilution of patients' serum which agglutinated Br. abortus. In all but four of these agglutination occurred in dilutions of 1:320 or higher. In two cases agglutination was observed in a dilution of 1:8000.

Daily remissions of the fever were very common. They occurred in the morning in 21 cases, during the night and in the morning in 6, during the day in 4, in the afternoon or evening in 3, while in one the remissions were stated to have been "uneven." In 5 cases daily remissions did not occur, while in 5 the question was not answered.

Sweating was a very prominent symptom, occurring in 37 of the 42 cases in which definite information as to this symptom was given. In several cases comment was made that the sweating was profuse.

Great variation was shown in the duration of the disease. The duration in weeks was approximately as follows:

Less than 2 weeks.....	4	20-23 weeks.....	1
2-3 weeks.....	6	24-27 weeks.....	2
4-7 weeks.....	11	28-31 weeks.....	2
8-11 weeks.....	9	over 40 weeks.....	1
12-15 weeks.....	6	not stated.....	1
16-19 weeks.....	2		

In several cases the duration was probably considerably longer than the figures indicate, as final reports as to the termination of the disease have not been received. No deaths were reported.—*Health News*.

Does Medical Publicity Work Really Have a Place?

"Publicity has been defined as the process of making information public." There is not any doubt that publicity methods employed in a simple way in the beginnings of social and health agencies have made tremendous strides in a comparatively few years. The advertising policy of the American Society for the Control of Cancer, for instance, has been greatly developed along these lines.

Not long ago the question was asked of us, "Does publicity bring its return and are you justified in asking for the phenomenal amount of gratuitous advertising space secured during the past two years?" Unreservedly, we answered "Yes." It has brought from many sources returns that otherwise would have been impossible. Through the co-operation of the press, which ran daily bulletins about the danger signals of cancer, hundreds of letters were received asking for literature and advice. Practically all the hospitals cooperated with "free clinic service for diagnosis of cancer" during campaign week. These hospitals reported many people taking advantage of this clinical opportunity and many early diagnosis being made. For some of these it was too late, but many others could leave happy, knowing they were free from the disease.

BENEFICIAL PROPAGANDA

Publicity has led to a splendid cooperation between the hospitals and the local New York City Committee of the American Society for the Control of Cancer. Because of this propaganda we have been able to send many cases to the hospitals for early diagnosis. The doctors who have worked with us so well do not feel that these patients have been unduly frightened. It is hoped when the budget grows, that the committee can aid the hospitals with sufficient funds to provide clerical and statistical aid for the study of special topics in their clinics for cancer.

The General Outdoor Advertising Company, the Criterion Advertising Company of New York, the O'Mealia Advertising Company of New Jersey, generously donated free poster space representing thousands of dollars. Had this advertising simply been a spectacular advertising stunt, not in a thousand years would the space have been given. The advertising companies well know the value of their large twenty-four-sheet and three-sheet posters and their influence on the public mind—whether it is a manufactured product or a campaign for health. The tremendous publicity of these posters have been the means of sending hundreds to us. Many people telephone requests to be directed to the nearest hospital, where an examination could be properly made, stating that they have a father or mother who has a sore or lump which is gradually getting worse, and explaining that the salves which they have been given at the drug store, or which have been recommended by some quack, were not doing any good.

CAR-CARDS REACH MANY

The car-cards which have been appearing in the street cars and trains are another invaluable medium of reaching many who travel back and forth to business each day. While doing so, glancing idly about, their eye catches the slogan "For Free Information Write or Telephone to the American Society of the Control of Cancer," and then comes a note to us pleading for help for someone near and very dear to them. The card in the subway and street cars has been generously contributed by the Barron G. Collier Company. The Roebeling Company has also placed the message of "Fight Cancer With Knowledge" in the trains of the New York, New Haven & Hartford and the Boston and Maine Railroad, and the Erie Railroad. The Wheeler Advertising Company has placed the cards in the Staten Island Rapid Transit Railway trains, and this is the first time that we have been able to carry our publicity into the Borough of Richmond.

The Hudson Tunnels have done their share, and while passengers are waiting in the tubes, the silver sword flames forth with its message of hope—"to come early" and, "in early discovery lies hope for permanent recovery."

There is on record a file of letters and inquiries of people who came to us for help, not only through seeing the car-cards and the posters and the advertisements in the magazines, but also through reading magazine articles which have appeared throughout the year. Written requests reach us from many strange places. Someone who came across an old copy of *Judge* in British Columbia wrote asking for information as a result of seeing an editorial which appeared there.

The *Forum* brought replies from all over the country, the *New York Lumber & Trade Journal*, *Century*, the *Atlantic Monthly*, the *American Missionary*, the *Condé Nast Publications*, *Vogue*, *Vanity Fair*, *House & Garden*, the *Forecast*, the *Catholic World*, the *Textile World*, the *American Hebrew*, *Hygiea*,

Mooseheart, *People's Home Journal*, *Hospital Social Service Magazine*, *Churchman*, *American Agriculturist*, *Pathfinder*, *Men of New York*, etc., all brought hundreds of requests for information and advice.

The Barton, Dustine & Osborn Company, Inc., assisted us cheerfully and "freely" at all times with our advertising problems.

KEEPING FACTS BEFORE PUBLIC

Of course we may be urging people to read our publicity when they sometimes do not want it, but we must keep our message before the public and create a desire on their part to understand it. Our message is a difficult one and yet it carries hope, for by teaching the symptoms we may dare to become hopeful. Our aim has always been to be merely stewards of the generous donations from our friends the advertisers, and we do not appeal for funds on our outdoor posters or car-cards. Our task is not to give facts once a year to the public, but to try to impress constantly upon their minds the need of cooperation, so that in time they will act upon it. We have to bear in mind the fact that many people whom we are trying to reach are not seeking enlightenment and therefore we must create a desire to receive it. Large commercial and industrial organizations, thought by the public to be without a heart, are the very ones that make it possible for us to carry our message, so that many persons who have been helped have to thank one of these generous donors of space for their health.

MASSACHUSETTS CAMPAIGN

The intensive publicity and educational campaign, carried on for two weeks during July by Dr. Lila Owen Burbank of the Massachusetts Department of Public Health through the newspapers and radio in cooperation with the Western Massachusetts Cancer Committee, continues to show splendid results in the increased numbers who present themselves at cancer clinics for physical examination.

The subject was presented before thousands of industrial workers in the western part of the state and many others received in their pay envelopes notices relative to cancer.

The campaign received fine cooperation from medical societies throughout the state.—Reprinted from the *Hospital Social Service Magazine*, August, 1929.

A Russian Genius—The Work of Professor Pavlov

Professor I. P. Pavlov is remarkable among the personalities of modern science. His reputation as a physiologist was made forty years ago, when he elucidated the main principles of the modern theory of the physiology of digestion. He succeeded in this great investigation and in his earlier work on the circulation of the blood because, among other reasons, he insisted on the preservation of the comfort of the animal during experimentation. Observation caused Pavlov to regard freedom from pain as one of the chief conditions of success in physiological investigation. When the Prince of Oldenburg founded the Institute of Experimental Medicine in Petrograd in 1891, Pavlov had the opportunity of designing a special laboratory and hospital in the Institute, where his principles of minimum pain to the animal could be practiced. This was the first laboratory of its kind in the world.

In his earlier experiments on the circulation of the blood Pavlov minimized pain rather by extreme surgical skill than by special technique. His operations on the veins were so swift that the dog scarcely noticed them. One dog used to jump on to its stand voluntarily day by day to have tubes placed in its veins to measure the blood pressure. The whole operation was performed so quickly that the dog scarcely noticed it. Extreme operative skill also enabled Pavlov to prove experimentally that certain nerves controlled the glands secreting the digestive juices into the stomach.

Though he had made remarkable discoveries by minimization he decided to eliminate pain completely, if possible. He devised preliminary operations from which the animal could recover completely before the experiment. Consequently, in the experiment proper the animal was free from pain.

Pavlov received the Nobel Prize for his researches on digestion as long ago as 1904. He is now additionally famous for other researches, the celebrated investigations on the activities of the higher parts of the brain, by his method of "conditioned reflexes." Though this sounds very different from his early work, it arose naturally out of (1) his work on the digestive glands, (2) his conception of the necessity for painless experimentation. It is evident that if pain upsets the normal physiology of the stomach, it must upset the normal physiology of the brain incomparably more. Evidently, experiments on the brain require to be painless, and, as he discovered later, have to be extremely carefully controlled. In the end he had to build a special laboratory in which dogs to be experimented on could be free from the disturbances of the presence of the experi-

menter, of sounds, even of rays of sunshine slowly moving across the floor as the sun declined.

The connection between the brain and the digestion arose out of the phenomena of mouth and stomach "watering." When a dog or a human smells food, or even hears the footsteps of the maid bringing in the soup, its mouth usually "waters." A dog in whose mouth food is placed immediately salivates and begins to chew. The reaction can be construed as a reflex started by the chemical effect of the food on the surface of the mouth; a message follows along a nervous path from this surface to the muscles of the jaw. But how about the dog that salivates at the sound of the maid's step outside the door? Does not its mind intervene between the sound and interpret it for its jaw-muscles? We have no need to assume that it has a mind, says Pavlov. The sound affects the dog's ear; a message goes to the cortex and thence to the jaw-muscles. Why does the cortex send the message to the jaw-muscles? Only because on previous occasions the sound of the maid's step has been followed so quickly and regularly by chewing that the messages set up in the dog's nervous system by that particular sound have got mixed up with the messages operating the chewing process. The nervous messages started by the sound start up messages for the jaws and drag them along with them, as it were. Thus a subtle reaction seeming to imply intelligence, such as detecting the food significance of a sound, can be described purely in terms of nervous messages and reflexes.

WHAT IS INTELLIGENCE?

Why not assume that all so-called intelligent actions are ultimately describable in terms of a long string of reflexes all mixed up? Pavlov and his followers find exactly what reflexes are operative when the dog does certain things. Thus they have accumulated an enormous number of facts about reflexes. By playing various reflexes off against each other the dog may be put into a state of sleep, hypnosis, or neurasthenia. Thus the behaviour of the dog during these distinctly "mental" states can already be described schematically in terms of reflexes—an extraordinary achievement.

So much for a slight indication of the importance of Pavlov's work on conditioned reflexes.

Pavlov will be eighty this autumn. Those privileged to meet him last year on the occasion of the delivery of the Croonian Lecture in London could easily understand why he arouses such fervor in his students. He resembles Tolstoy in his intense vivacity, and in his passionate love of sport. Pavlov considers that his athletic games have preserved his muscular skill and developed ambidexterity, both important in surgery, in which he so excels.

This extraordinary man disappeared from scientific Western Europe behind the barrage of the Russian Revolution. But a detailed scientific account of the work on conditioned reflexes was published two years ago by the Oxford University Press. A more popular account, prefixed by a biography, has now been published by Martin Lawrence ("Lectures on Conditioned Reflexes"). Pavlov disagreed personally and almost violently with the Bolsheviks, but as soon as possible Lenin himself saw that he was supplied as well as Russian means would permit with scientific equipment. He now has everything he requires.—*The Manchester Guardian*.

Birth Control Viewed as a Moral Force of Consequence

The American people are not ceasing to marry and the American family is not disappearing. Notwithstanding the increase in divorce, and the supposed "evils" of the "jazz" and "machine" age, it is quite probable that the American family is on a firmer basis now than ever before.

The machine in the home has had a strong tendency to make housewives out of what otherwise would have been single female servants. The machine has taken over the burden of slavery and humanity has much more time to cultivate the higher things in life. Of course we may expect a few excesses at first, but generally speaking mankind is saner and safer than during the "good old days" of slavery, white and black.

As regards divorce, we are not at all certain that this institution is harmful to family life. We are told that childless marriages are often a cause of divorce, and birth control is blamed. More than likely it is sterility on the part of one side of the family, and not birth control, that is the real cause of the trouble. In such cases it is the desire for children rather than the reverse that leads children-loving people to seek family life elsewhere. It is generally agreed that childless or one-child marriages are not nearly so successful as two, three or four children in the family, but like everything else that is worthwhile there is a common-sense limit to the number of children in the family. This limit of course varies with the family income and resources. The poor condemn the rich for their luxury, while the poor themselves participate in the greatest luxury of all, namely,

having more children than they can healthfully support and properly educate. As a rule, the rich alone suffer for their luxury, but the luxury of the poor creates a situation which encourages ignorance, crime and misery—if not social unrest, war and famine.

"Interest in birth control," says Professor William F. Ogburn, president of the American Sociological Society, "is largely concerned with the speculation as to its effect upon morality, as to whether it could be expected to encourage or discourage marriage."

"The evidence which I have collected on the subject indicates that birth control increases the number of marriages. I have made a survey of marriage and birth statistics in certain cities of the northern part of the United States. The age factor was held constant and in a comparison of the same age groups I found that the cities with the lowest birth rate had the highest marriage rate among young people. Undoubtedly the birth rate varies between cities of the same general region, and where the same general conditions prevail, because of the influence of birth control methods. This fact is admitted in accounting for the variance between certain countries. We must admit the influence of birth control in England, for instance, where, since 1890, the percentages of marriages have increased, and where, notwithstanding, the birth rate has decreased.

"If the evidence bears out the assumption that birth control encourages marriage, and if we accept the other evidence which indicates that marriage is the more desirable social state, logically we must regard birth control as a moral force of prime importance."

The fluctuations of a single year, however, are not conclusive. Right after the World War, when the soldiers were returning to civil life, there was an unusual increase in the marriage rate. After this unusual increase we would naturally expect a sag in the marriage curve, but certain moralists have argued from this bit of exceptional evidence that family life in this country was going to pot, while the truth of the matter is that our marriage rate has steadily increased since 1890, or rather the percentage of the population married for each census year since, which is even more significant, has increased as follows: 55.3, 55.7, 57.3 and 59.9 respectively (American Marriage and Family Relationships, p. 151, by Groves and Ogburn).

In New York City the marriage rate increased from 10.12 for the five-year period 1910-14, to 11.18 for the five-year period 1923-27. In the meantime the birth rate of New York City decreased from 27.21 to 21.88, the death rate from 15.09 to 12.55 and the still-birth rate from 1.35 to 1.05 (World Almanac, 1929, p. 507).

In New York State the birth rate decreased from 23.7 to 20.5 between 1910-14 and 1923-27, the death rate from 15.4 to 12.8, but the number of persons married per 1,000 population increased from 19.20 to 19.86 (Ibid. p. 485).

Do these figures indicate that American family life is decaying?—*New York Times*.

Proposed Amendments to the Constitution and By-Laws of the United States Pharmacopoeial Convention

The following amendments to the Constitution and By-Laws of the United States Pharmacopoeial Convention are recommended by the Board of Trustees for adoption by the Convention at Washington, May 13, 1930. Words to be deleted are enclosed in brackets and words to be added are printed in italics:

CONSTITUTION—ARTICLE II—MEMBERSHIP

Section 1. The members of the United States Pharmacopoeial Convention, in addition to the Incorporators and their associates, shall be delegates elected by the following organizations in the manner they shall respectively provide: Incorporated Medical Colleges, and Medical Schools connected with Incorporated Colleges and Universities; Incorporated Colleges of Pharmacy, and Pharmaceutical Schools connected with Incorporated Universities; *Departments of Incorporated Universities, which Departments are devoted to scientific research in chemistry or in other lines related to chemistry or pharmacy*; Incorporated State Medical Associations; Incorporated State Pharmaceutical Associations; the American Medical Association; the American Pharmaceutical Association, the American Chemical Society, the National Association of Retail Druggists, (and) the National Association of Boards of Pharmacy, and the *Federation of State Medical Boards of the United States*; provided that no such organization shall be entitled to representation unless it shall have been incorporated within and shall have been in continuous operation in the United States for at least five years before the time fixed for the decennial meeting of this corporation.

Medical and Pharmaceutical Associations and Colleges of Medicine and pharmacy in Hawaii, Porto Rico, the Philippine Islands

and in the Republic of Cuba (where the Pharmacopoeia of the United States has been adopted as the official pharmacopoeia) shall likewise be entitled to representation by delegates on the same basis as the other Associations and Colleges mentioned in this Section.

Section 2. Delegates appointed by the Surgeon-General of the United States Army, the Surgeon-General of the United States Navy, and the Surgeon-General of the United States Public Health Service, the Secretary of Agriculture, the Secretary of Commerce, the Association of Official Agricultural Chemists, the Association of American Dairy, Food and Drug Officials, the National Wholesale Druggists' Association, the National Dental Association, the American Drug Manufacturers' Association, the American Pharmaceutical Manufacturers' Association, the Federal Wholesale Druggists' Association, the United States Division of Customs, * * (and the University of Havana) and by the organizations not hereinbefore named which were admitted to representation in the Convention of 1900, shall also be members of the corporation. Each body and each branch of the United States Government above mentioned shall be entitled to send three delegates to the meetings of this corporation. But no such delegates as are provided for in this article shall be members until their credentials shall have been examined and acted upon as provided for by the By-Laws. Delegates admitted as members at any decennial meeting shall continue to be members of the United States Pharmacopoeial Convention until their successors shall have been appointed and admitted as delegates to the ensuing Convention and no longer.

*NOTE:—It being understood that the University of Havana will be included as a part of the representation accorded to the colleges and associations of the Republic of Cuba and that the elimination of the words "and the University of Havana" is recommended only in the event of the adoption of the new amendment to Section 1.

BY-LAWS—CHAPTER VII

OF THE COMMITTEE ON CREDENTIALS AND ARRANGEMENTS

Article 1. The Committee on Credentials (and Arrangements) shall consist of five members and shall be appointed by the President from among the delegates to the decennial meeting, not less than two months before the meeting. *The Chairman of the Board of Trustees shall be a member ex officio of the Committee on Credentials.*

Article II. It shall be their duty to examine carefully the credentials of all delegates. *Credentials issued in blank, leaving the names of the delegates and alternates to be inserted subsequently by other than the regularly constituted officers of the appointing associations or institutions, shall not be accepted as meeting the requirements of this Chapter.* Immediately before the meeting of the Convention they shall furnish to the President a roll containing the names of the Incorporators, the Officers of the Convention, the Board of Trustees, the General Committee of Revision and of those delegates whose credentials are unquestioned and approved. They shall also make report to the Convention concerning all credentials which have been questioned, or appear to them to be of doubtful validity.

Article III. (This Committee shall continue in office until their successors are appointed.) *The Committee on Arrangements shall consist of five members residing in or convenient to the City of Washington, D. C., and appointed by the President, and shall be charged with the duty of making the necessary arrangements for holding the said decennial meeting. The President, Secretary and Assistant Secretary of the Convention shall be ex officio members of the Committee.*

CHAPTER IX.—OF MEETINGS

Article 1. The regular decennial meetings of the Convention shall be held upon the second Tuesday in May every twenty years as provided in the Constitution and the place of meeting shall be in the City of Washington, D. C., unless, in case of emergency, the Board of Trustees and officers of the Convention, by joint vote, shall select some other place of meeting and some date within the same year other than the second Tuesday in May. See Constitution, Article V. Twenty-five members shall constitute a quorum.

Article II. Section 4. Report of the Chairman of the Board of Trustees, the Secretary of the Board of Trustees, (and) the Treasurer of the Convention and the Chairman of the Committee on Revision.

Section 5. The reports of the Committees on Credentials and Arrangements shall then be considered.

Flood Sanitation

It is now considered an established fact, that in great disasters involving the massing of large numbers of refugees attention should be given to preventing the spread of syphilis and gonorrhea and that social hygiene should constitute a part of the relief, rehabilitation and sanitation program.—Albert J. Read, *N. Y. State J. of Med.*, April 15, 1929.

Diagnosis and Treatment

The Treatment of Patients with Low Blood Pressure

E. N. Chamberlain (*The Lancet*, April 27, 1929) states that hypotension may be said to exist when the systolic blood pressure falls below 110 millimetres of mercury. He divides the patients with low blood pressure into three groups: (i) those requiring no treatment, (ii) those in whom treatment is usually unavailing, (iii) those in whom treatment is requisite and usually attended with success. In the first group are found healthy people, frequently athletes. The second group includes those with *status lymphaticus* and certain types of neurasthenia. The patients in the third group fall into two classes, first those in whom treatment is required owing to such conditions as hæmorrhage or shock, and secondly those in whom hypotension is one of several symptoms requiring attention. The low blood pressure of shock or hæmorrhage is largely due to diminution of circulating fluid either through capillary stasis or through direct loss of blood. The treatment, therefore, consists in replacing the fluid lost by various means. In combating the hypotension of anaphylaxis, the hypodermic use of adrenalin is beneficial. A fall of blood pressure during general or spinal anaesthesia should be treated on the same lines as in shock. The conditions in which hypotension is less urgently in need of treatment, include cardiac affections, acute and chronic toxæmias and various endocrine disorders. A sudden fall of pressure in a patient with hypertension usually portends serious heart failure and should be treated by means of rest and warmth and digitalis. In auricular fibrillation with low tension, the correct administration of digitalis may restore the pressure to normal. Bradycardia is often accompanied by hypotension, especially in patients with Stokes-Adams seizures. Adrenalin hydrochloride may be given hypodermically with benefit. In acute infections hypotension is usually due to a combination of two factors, myocardial weakness and vasomotor paresis. In the treatment of the myocardial weakness ample rest in bed is essential. Digitalis may be of value. The loss of vasomotor tone may be combated by carefully graduated exercises and massage. Strychnine and adrenalin are useful vasomotor stimulants. The diet should be full and nutritious with an abundance of milk, eggs and cream. As low blood pressure occurs very frequently in pulmonary tuberculosis, a careful search should be made for signs of this disease in patients with persistently low blood pressure. Foci of infection should be eradicated in chronic infections accompanied by hypotension. Of the endocrine disorders accompanied by hypotension, Addison's disease is the classical example. Treatment by whole gland suprarenal by mouth and subcutaneous injection of adrenalin does not give very satisfactory results. Some pituitary disorders are accompanied by hypotension and are treated by means of whole gland pituitary extract by mouth and intramuscular injections of pituitrin. Ephedrine in doses of 0.015 gramme (a quarter of a grain), given every three hours for several days, is of value in postural hypotension.—*The M. J. of Australia*, Aug. 3, 1929.

Diabetic Coma

Dr. E. P. Joslin (*Jour. Amer. Med. Assoc.*, 1929, xciii., 33) does well to point out that although seven years have now passed since the discovery of insulin, diabetic coma goes on taking its toll. It is, as he says, high time that deaths from this cause became very rare, and the simple outline of treatment which he sets out would go far towards achieving this if it were generally carried out. The treatment of the emergency of coma should, he says, take precedence over everything else and as soon as the diagnosis has been made insulin should be injected subcutaneously every half hour in doses of from 10–40 units or more until returning consciousness, normal respiration, and decreasing glycosuria show that recovery is beginning. To meet dehydration, a quart of normal saline should be injected subcutaneously at once, because in coma it is dangerous to trust to retention and absorption of liquids by the mouth or rectum. Intravenous injections are satisfactory if given slowly to avoid distension of the heart. The circulation, he suggests, may be stimulated by caffeine sodiobenzoate in doses of grs. 7½ given if necessary four-hourly. The stomach should be gently washed out so that liquids will be retained, and fluid containing about 50 g. of carbohydrate should be given in the first 24 hours. A gradual return to simpler articles of regular diet may then be made, the dose of insulin being regulated by frequent urinary tests, at first every two hours and later every four or six hours. The dose of insulin should be 15 units for a red reaction with Benedict's solution, 10 for a yellow, and 5 for a green, and no insulin is required if the urine is sugar-free.

Prevention, however, is better than treatment and the patient must be taught to avoid coma. He must never omit insulin, in

Joslin's opinion, so long as there is sugar in his urine, and irrespective of the diet he is taking he must increase the dose if he has fever or an infection. This is an aspect of the subject lately treated of by Dr. R. Boulin, who places infection in the first rank of causes predisposing to coma. The more impressive conditions such as pneumonia and gangrene are, of course, not likely to be overlooked, but sore-throats, influenza, boils, and small infected ulcers have an importance to the diabetic which is out of all proportion to their apparent gravity. Coma in a chronic diabetic accompaniment by any of the above conditions does not react easily to insulin and the prognosis is correspondingly grave. Next to infection emphasis should be laid on fatigue, both physical and mental, whilst shock from trivial injuries, and intoxication by alcohol or anaesthetics are other important precipitants of coma. Error in the diabetic régime is another and better recognized factor, and in this connection Boulin mentions especially excess of animal proteins. In some diabetics, he says, too much meat is a far greater danger than too much fat. Surgical intervention is an obvious risk; this should not, however, mean that its aid is withheld or even postponed, but only that due precautions are observed. Starvation he regards as a valuable weapon in the treatment of precomatose conditions. The argument that because in the normal subject it produces slight acidosis it is therefore likely to increase the acidosis of diabetes, he dismisses as unjustified by facts; many authorities have consistently used complete starvation to reduce acidosis and have found it quick and reliable. As regards diagnosis he lays stress on the gradual onset of mental and physical feebleness passing progressively into loss of consciousness. Coma never comes on unless there are large amounts of sugar, and acetone as shown by the ferric chloride test, in the urine; but it is impossible by urinary examination alone to estimate the degree of acidosis, for this will depend upon the extent to which the kidneys allow these bodies to pass. Other and well-known signs of coma are loss of appetite, diarrhoea, vomiting, and abdominal pain, whilst the association of slow and ample inspiration and forceful expiration with a smell of acetone in the breath is, of course, conspicuous evidence of its commencement.—*The Lancet*, Aug. 24, 1929.

Prevention of Diabetic Deaths

We physicians can lower diabetic mortality still more provided we attack diabetic coma. The Metropolitan Life Insurance Company has recently shown that out of 1,044 fatal cases of diabetes reported to them this year up to April 15, coma was responsible for 433 deaths or 41 per cent.

It is really our own fault, therefore, that mortality from diabetes is not decreasing, because diabetic coma is always preventable and nearly always curable. As one of the best practitioners recently said, "Diabetes is a chronic disease, but doctors do not realize that it has acute manifestations."

Indeed, coma develops because of ignorance, negligence or carelessness. Diabetics go into coma carelessly when they break their diets and overeat; they go into coma as a result of negligence when in the course of an infection, either general like measles or local like a boil, they neglect to make the proper tests to determine whether they are using enough insulin; they go into coma ignorantly, because they stop their insulin when they cease to eat for one cause or another.

A diabetic should never omit his insulin unless his urine is sugar free. He must never forget that when he stops eating food he begins eating himself—his own body—and so still requires insulin and often very much more insulin than before.

If he has an infection as a cause of his loss of appetite he should that an infection lowers the value of insulin and thus makes more insulin than usual a necessity.

Coma, and by diabetic coma is meant acid poisoning, is a sly fox and will steal away a diabetic before he or his friends suspect it. Within a few years mild symptoms such as indigestion, lack of appetite and pain in the abdomen may be followed by difficult breathing, drowsiness and unconsciousness. The only safe way, therefore, for the diabetic to protect himself against coma is to keep well and sugar free all the time.

I try to instill into the minds of every diabetic I see that:

Whenever he feels ill and sick he should (1) call his doctor (2) go to bed (3) take a hot drink every hour (4) taken an enema (5) keep warm (6) get a nurse or someone to care for him. Another good rule is to have boiled water ready for the doctor when he arrives in case he wishes to use it.

Minor differences in the treatment of coma exist, but all agree that promptness in diagnosis is everything and next to it comes energetic treatment at the earliest possible moment. If coma exists the doctor must give up everything else until the patient comes out of it. (1) Insulin is usually required every half hour in 10 to 40 unit doses or more, varying with the severity of the symptoms and if it is given intravenously it should always be given subcutaneously at the same time. (2) Dehydration of the

patient must be overcome by the subcutaneous injection of normal salt solution and one cannot rely on fluids given by mouth or rectum. (3) The heart is almost always weak and needs stimulation with caffeine sodiobenzoate, 7½ grains and this may be given every hour if need be, for three or four doses. On account of the weakness of the heart, salt solution must be injected very slowly if given intravenously. (4) With children and usually with adults the stomach is distended and unless evacuated prevents the subsequent retention of liquids such as water, gruels, ginger ale or the juice of 2 or 3 oranges, in other words, carbohydrate amounting to 50 grams. Therefore, gently wash out the stomach.—*Elliott P. Joslin*.

Multiple Subcutaneous Sarcomata

R. Cove Smith, M.B.—H.C., male, aged 72. About six months ago patient first noticed two lumps about the size of a pea in the right groin. Two months later nodules appeared on the front of the chest. These nodules gradually increased in size and fresh ones appeared on the trunk and arms. Some are now definitely infiltrating the skin and becoming tender. So far none have appeared on the legs or head.

The patient is having lead selenide treatment.

Discussion.—Dr. Burrell asked whether there had been any reaction as a result of the treatment.

Dr. Cove Smith (in reply) said he thought some of the smaller nodules appeared to have decreased in size; the larger ones had shown no such tendency, but rather had commenced to ulcerate through the skin. While giving lead selenium, subsidiary treatment with liver was essential to counteract blood destruction, and with magnesium sulphate to prevent the accumulation of lead in the intestine; calcium iodide mixture had also been given to prevent the deposition of lead in bone. So far, 5, 7, 10 c.c. of lead solution had been administered and no toxic reaction had been seen, except that after the last injection the red cells had somewhat diminished. For that reason there would now be an interval of a fortnight between the doses.—*Prac. Royal Soc. of Med.*, Mch., 1929.

Correspondence

An Alcohol-Conscious People

To the Editor of THE MEDICAL TIMES:

Upon what foundation has prohibition been reared? What element in that foundation must be repudiated more decisively before effective temperance education can be attempted?

Neal Dow, the acknowledged father of prohibition, and his followers down to the present time have believed that the cause of drunkenness is drinking. On the following ignorant idea the Eighteenth Amendment is founded: prevent each and every one from taking a drink of alcoholic beverage and you cure drunkenness. Accordingly, by the same line of reasoning, all gluttony can be cured by preventing people from eating.

Drunkenness is actually caused by a condition of degeneracy and those suffering from it should be treated accordingly.

Our nineteenth century man was progressing very rapidly along lines of self-discipline over his brethren of the eighteenth century. Drunkenness, gluttony and vice were frowned upon by society. A gentleman was not supposed to disgrace himself by becoming intoxicated.

According to the latest reports of our would-be reformers "Drunkenness is no longer a menace to society; there is not enough left to justify a fight against it." Very well, but prohibition has made an alcohol-conscious people of all who are not degenerates, with the flask as the symbol of their fealty—or degradation. Our children are baptized in the name of whiskey, gin and beer, and marked with the sign of the flask (on the hip), in token that thereafter they will not be ashamed to acknowledge Mr. John Barleycorn and his disciples. Our youth have been alcoholized and initiated into the dens of the underworld; that they have been largely criminalized is patent to all.

A great wave of crime has swept over the country since prohibition and this can be partly accounted for by the fact that a certain class of people have found bootlegging an easy way to get rich quick. They have been welcome at the offices and the back doors of the homes of the rich, and, as a result, they are forcing the front doors and the money vaults. Familiarity breeds contempt. I. C. H.

Doctors Head List of 4,338 Vocations in New York City

New Yorkers engage in 4,338 separate occupations, according to the classifications in Donnelly's Red Book. Doctors lead with 13,000 in the entire city. 5,800 in Manhattan alone. Lawyers come next with 4,900 in Manhattan and a total of 6,900 in the city.

The Physician's Library

Sterilization for Human Betterment. By E. S. Gosney, B.S., LL.B., and Paul Popenoe, D.Sc. New York. The Macmillan Company, 1929. Price \$2.

This volume of 202 pages actually comprises two books in one, a summary of our knowledge of human sterilisation for the benefit of society and a report of the work done to date in the State of California. The first of these efforts leaves nothing to be desired while the second is somewhat unsatisfactory from the statistical aspect, although doubtless through no fault of the authors. We are told, although only in an appendix, that 6255 men and women have been sterilized in 7 hospitals and homes in California. As we understand it, sterilization is carried out for the most part on such of the interned as are to be set free sooner or later. The precise status of the sterilized is not made clear. There were 1488 mental defectives, and since very few criminals and degenerates figure in the returns the inference is that the balance were insane. The authors state that one in every 5 or 6 interned for insanity is subjected to sterilization, presumably only such as have some outlook for release. The difficulties of following up the liberated must be great and apparently only a small proportion can readily be checked up. The operations are limited to vasectomy and salpingectomy and in but a few cases did pregnancy follow either intervention. To the above total should be added 485 cases of voluntary sterilization of normal subjects, mostly women, which brings the grand total up to February 1, 1929, to 6740.

Varicose Veins. By H. O. McPheeters, M.D., F. A. Davis Co., Phila. 1929. Pp. 208. Price, \$3.50.

This volume deals with the injection treatment of varicose veins and goes into detail as to the methods in use. Dr. McPheeters shows that he has made an exhaustive study of this subject. The book is clearly written, well illustrated, and thoroughly indexed. Those who are doing this kind of work will find it valuable. I do not like his frequent use of the words "the author"; they appear four times in the introduction and throughout the volume. His consideration of the anatomy, etiology and technic is complete. The publishers have made an artistic work in printing the volume. M. W. T.

Gynecologic Technic. Surgical and Medical. By Thomas H. Cherry, M.D. F. A. Davis Co., Phila. 1929. Pp. 678.

This is a practical working volume on technical work in gynecology. It is not a textbook but is for the practitioner who is working daily along these lines. The author gives one standard operation for each condition, which method he believes is the best. Whenever possible a single method of therapy is given. The illustrations are excellent and were all drawn by the author, which is rather unusual. It seems to me that this adds greatly to the value of the work. There are 558 illustrations in all. The descriptions of operative procedures are clear and each step is well illustrated. All in all, it is a valuable contribution.—M. W. T.

Study of Masturbation and the Psychosexual Life. By John F. W. Meagher, M.D., F.A.C.P. Second ed. New York. William Wood and Company. 1929. Price \$2.

The first edition of this little book appeared in 1924 and, in his preface to the second, the author does not mention any changes, although recent references show that he has kept the subject up to date. The number of pages is 130, although the publisher's announcement claims 140, evidently a typographic error. The fact that the first edition was favorably reviewed by eight or more of the better class of medical journals makes the high character of the work evident. The author has consulted over 200 authorities and has had a large individual experience as a neurologist in this class of patients. If we bear in mind the extreme difficulty in treating this subject scientifically we must admit that the author has done extraordinarily well.

A Layman Looks at Doctors. By S. W. and J. T. Pierce. New York, Harcourt, Brace and Company. 1929. Price \$2.

This autobiographic book of 251 pages by a husband and wife is unusually well written and shows a marked familiarity with modern neuro-psychiatry. The wife, afflicted with an anxiety neurosis, spends several years in sanitarium treatment, going from one to another man of eminence, the mannerisms and technique of each being carefully individualized

by the authors. Her own father as a neurologist was responsible for the choice of medical men. At last nothing is left but psychoanalysis which effects a cure, although only after much persistence. The father objected strenuously to the analytic treatment and even after the cure does not give the credit to the method but to Father Time; although just as the book closes he is beginning to hedge a little. There are a few things about the book which are baffling. Is it propaganda for psychoanalysis? The doctors who failed to cure are admittedly clever and had cured many cases like her own, they did not apparently overcharge her, and most of them at least were evidently quite honest and sincere; yet the publication of the Hippocratic Oath at the beginning of the work suggests that they were not as a body ethical.

Materia Medica and Therapeutics Including Pharmacy and Pharmacology. By Reynold Webb Wilcox, M.A., M.D., etc. 12th edition. Philadelphia. P. Blakiston's Son and Co. 1929. Price \$5.

It is only necessary to state concerning this volume that it represents a thorough revision of the preceding edition to conform to the Tenth edition of the U. S. Pharmacopoeia and the Fifth Edition of the National Formulary. The sections on Pharmacy and Materia Medica have been completely rewritten and the balance of the volume revised. The number of pages is 690.

The Treatment of Diabetes Mellitus with Higher Carbohydrate Diets. By William David Sansum, M.S., M.D., F.A.C.P., Percival Allen Gray, Ph.D., M.D., and Ruth Bowden, B.S.

This book represents the peak of the reaction from the use of high fat diets in diabetes, and when the results of this method are considered in connection with the lately proposed theory of Tuttle* that there exists in the body a continuous supply of cellular or tissue insulin of equal or greater importance than that of the pancreas a distinctly new method of treating diabetes is revealed which accomplishes the desideratum of permanently raising the tolerance perhaps even back to normal.

Sansum finds that with a standard diabetic diet adjusted to insulin, if he removes 100 gms. of fat, he may replace it with 130 gms. of carbohydrate upon the same dose of insulin with a sugar free urine. This added carbohydrate stimulates the cellular insulin and raises the tolerance. This is a new method indeed! He gives many cases in proof of his claims.

Outside of this central proposition which is chiefly of interest to advanced students of diabetes this book offers the simplest explanations of the fundamentals of diabetic practice yet produced, and it is consequently of the greatest value to the general practitioner, nurses and medical students. Above all it is small, compact and beautifully printed, and at a moderate price.

Treatment of Minor Injuries

(1) *Wounds* are best sterilized by plentiful use of soap and water. Antiseptics may be colorful and much vaunted, but in reality they are unreliable.

Secondary suture is safer and gives almost as rapid healing as primary suture.

All traumatic wounds are already infected and hence should be drained.

(2) *Hand Infections* should not be ruthlessly incised, but on the contrary the attack should be along anatomical routes.

(3) *Joint Injuries* should be subjected to early mobilization if we would escape the long drawn out sequelae of arthrosynovitis.

(4) *Fractures* should be set at once, and, in nearly all of them, improvised traction will accomplish reduction during the period in which we usually do nothing except to apply preliminary splinting.

(5) *Burns* are infected wounds and should be so treated. Débridement has a limited field.

(6) *Foreign Bodies* should first be well localized and removed only in the pre- or post-infected stages.

(7) *Traumatic Surgery* is acute surgery demanding immediate treatment if complications leading to disability and deformity are to be prevented.—Moorhead, *N. J. State J. of Med.*, Sept. 1, 1929.

Peptic Ulcer and Cancer

From surgical experience gained and from clinical observation one may state that about 5 per cent of chronic gastric ulcer undergoes malignant changes; that carcinoma arises primarily as such, and that chronic gastric ulcer usually remains a benign disease from a histological standpoint.—Irving Gray, *Long Island Med. J.*, April, 1929.

* *N. Y. Medical Times* for August.